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For me a Mattock to
present to a Coffin, a
work, the object of which is
to induce invalids to find
a home on Minnesota soil
might be considered a
little grave. So I will
give it to a writer who
is not for raising
spirits "Carleton"

with the kind wishes
of the author


Born Mattock

St Paul July 10th 7,

MINNESOTA

AS

A HOME FOR INVALIDS.



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MINNESOTA

AS

A HOME FOR INVALIDS.

BY

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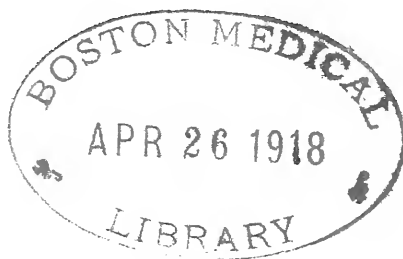
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TO THE
PRESIDENT AND MEMBERS
OF THE
MINNESOTA STATE MEDICAL SOCIETY

This Work

IS RESPECTFULLY DEDICATED.

P R E F A C E.

AN actor who was about to personate Othello, remained an unusual time in the dressing-room. The audience becoming impatient and clamorous, necessitated a visit of the manager to the room of the tardy tragedian, whom he found, to his great surprise, blacking himself from head to foot.

“What does this mean?” said the manager. “It means,” replied the actor, “that I cannot enter into the spirit of this piece unless I am black all over.”

Thus would we account for our introductory chapters. We could not write of a climate for consumptives unless we first considered the disease, its nature, and peculiarities.

We trust that our readers will follow us through the introductory chapters, as the following chapters presuppose a knowledge of consumption as it is now understood.

Thus far but little has been written of Minnesota from a professional standpoint. True, the different

works on the State have contained valuable information for the invalid, but this information has been largely made up from the experience of laymen.

The profession are being constantly besieged for their opinion.

We now present to the public, so far as we are able, the views of the medical profession of the State regarding Minnesota as a climate for invalids. We do not claim authority for so doing. This has not been delegated to us, nor would we be understood as their representative, except so far as we have conversed with them and listened to their views at our annual reunions.

For a period of nearly four years we have presided over the Board of Health of St. Paul. During this time we have kept a careful record of deaths.

The conception of this little work originated with our connection with the board, and we have delayed publishing that we might write understandingly.

The result of our careful, and, we think, impartial, observation, we now present to the public.

We have no apologies to offer for the book, else we should not have written it. We do not seek the "kind consideration of an indulgent public," because we do not want it; and, moreover, we would not advise those who are interested in a work of this kind to grant any

indulgence to a treatise on any particular climate. Remember, the selection of a climate may be a matter involving life with you; therefore it behooves you to judge understandingly, and not accept as a guarantee of truth the name or eminence of the writer.

The meteorological observations which form the Appendix are the labors of the Rev. A. B. PATTERSON, D.D., of St. Paul. We clipped them from the daily papers. They were made for the Smithsonian Institute, and were consequently not intended "to prove a theory."

In common with all who have lately written on Minnesota, we are indebted to JOSEPH A. WHEELOCK, Esq., for valuable matter which he collected while acting as Commissioner of Statistics of the State.

BREWER MATTOCKS, M.D.

ST. PAUL, MINNESOTA, October 1, 1870.

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MINNESOTA

AS A

HOME FOR CONSUMPTIVES.

CHAPTER I.

CONSUMPTION—ITS FIRST STAGE.

THE intelligent physician, before commencing the treatment of a case, first makes himself thoroughly acquainted with the disease before him. He studies its history, its symptoms, its peculiarities. He goes still further, and acquaints himself with the previous health of his patient, his habits, and his occupation, also with his surroundings. Having possessed himself of all these facts, the physician is thus enabled to prescribe intelligently.

So with the invalid in search of a climate. He should understand the nature of his own disease, and its cause; this known, the cure is suggested.

It is not difficult to recognize a case of consumption. All of its symptoms are characteristic,—a child may understand them.

The seaman, when the storm is upon him, recognizes the tempest, and fully understands the consequences if he does not gain the harbor. Better for him had he fore-

seen the storm, and not ventured from his moorings. We know of no class of persons to whom the axiom, "forewarned, forearmed," is more *practically applicable* than to those who have reason to believe their lungs are affected.

In times past, consumption was divided into three stages, but within the last few years another stage has been designated,—a *pretubercular stage*,—a diseased condition immediately preceding the deposition of tubercle in the lungs. This stage is treated by many of the profession as necessarily a part of consumption,—a set of symptoms belonging to this disease alone. But cough, pain in the lungs, hemorrhage, or any other characteristic symptom of lung-trouble, form no part of this pretubercular stage. The principal feature of this first stage is simply a lowered vitality,—a failing of the vital powers; and this failing is previous to the evolution and deposition of tuberculous matter.

In fact, say the advocates of this theory, first come the blood-changes, producing a lowered vitality, then a failing of the vital powers,—the deposit of tubercle and decline. Consumption, or tuberculosis, according to this theory, would be the original cause, and the pretubercular stage the first stage of its development. Or it may be that climate,—especially where there be a predisposition,—or any other exciting cause, will engraft consumption upon a previously enfeebled frame; just as a feeble person is more liable to contract disease, during an epidemic, than a robust person.

The wolf is unable to overcome a strong, robust

buffalo, yet it gains a livelihood from preying on the sick and wounded ones of the herd. Taking this view of it, consumption would be the effect, not the cause, of this lowered vitality. We rather incline to the latter theory. But, practically, it makes little difference, so that a pretubercular stage is admitted.

We would make this first stage the theme of the chapter. This condition of affairs discovered, the dreaded disease may, in many instances, be *warded off*.

If the gift of thorough proficiency were to be bestowed upon us in only one particular branch of the knowledge of diseases of the lungs, we should choose to be made aware of the avenues of their insidious approach, for then could we be effective in the cure of the disease; and yet we are confident that nine-tenths of our patients, instead of showing gratitude for our foresight, would chide us for alarming them unnecessarily. For do not many of those who are on their dying-bed with consumption strenuously deny that their lungs are diseased?

Some months since we were seated in church one evening, just behind a lady who, it was plain to perceive, was on the eve of a decline, yet she did not cough. Now if we made either herself or her husband aware of our fears, we should be laughed at or blamed. We know not but that her physician has foreseen her impending danger, and warned her; if so, her wrappings plainly showed that she did not fully appreciate it.

Weariness and dislike of exertion are among the symptoms of the first stage, and yet rest and quiet are

not enjoyed; but moving about and exertion are dreaded. A disinclination to rise in the morning, not that the morning nap is pleasant and enjoyable, but the patient dreads the day with its cares. It matters little whether the cares are imaginary or real, they are a burden. Study is wearisome, business is irksome, and pleasure is not anticipated; to-morrow is but a repetition of the cares of yesterday and to-day.

Inconsiderate parents chide a daughter for her listlessness and languor, and they call her indolent, and urge more study and require more exercise.

Often the schoolgirl, mortified at her standing in her class, sensitive of the reproving look of her teacher, and discouraged with her efforts, seeks to make up at night for her deficiencies of the day, and lingers over her books until weariness and exhaustion force her to retire. In her restless sleep she moans and mutters over the burden of the day, and awakes in the morning to again carry her load.

In this condition of body and mind a slight cold is contracted, perhaps by a sudden change of the weather; maybe while dragging herself along the street, *for exercise*, she contracts damp or wet feet, which results in a bad cold, and the enfeebled frame, unable to rally and recover its tone, yields to the cough, and then the parents and physician discover serious trouble, and the pretubercular stage is passed.

The clerk confined to the store, or the mechanic at his bench, gradually loses his relish for food; the waning and capricious appetite is tempted with delicacies at unseasonable hours, and indigestion and dys-

pepsia follow. The form loses its plumpness, and becomes angular and thin, exertion is unpleasant and wearisome, and the employer becomes dissatisfied. Smarting under reproof, the young man forces himself to renewed exertion, and perhaps perspires, as the least exertion occasions perspiration. Worn out and tired, he rests in a draught of air, and then follows a congestion of the lungs, or perhaps a hemorrhage, and the cough commences and is kept up, and this young man is beyond the pretubercular stage.

To enjoy good health, digestion and assimilation should be perfect. Nutrition perfect, consumption is a physical impossibility. A healthy man contracting consumption would be a phenomenon. A healthy person may contract a cough, and neglect it until it impairs the functions of life,—such as digestion and nutrition,—then consumption may follow; but it was the neglected cough which occasioned malnutrition, yet the *cough* was not the immediate cause of consumption.

There is a disease known as quick consumption, or “galloping consumption,” which is speedily fatal. In this disease an attack of inflammation of the lungs is followed by a general distribution of tuberculous matter

Death occurs in smallpox (if the disease tend to a fatal termination) about the tenth day; but occasionally its virulency proves fatal at once,—almost as soon as the disease is developed.

In this way consumption may attack a healthy person, and prove fatal; but, even in these cases, it results from inflammation of the lungs.

Dr. Dobell, of London, advocates the idea that consumption is caused by a failure of the functions of the pancreas, whose duty it is to prepare the fats of the food for digestion. Just as the lye of the housewife converts the fatty savings of her kitchen into soap, which is easily dissolved by water, so the pancreatic secretion prepares the fats of our food for solution.

Says the doctor (and, as senior physician to the Royal Hospital for Consumptives, his opinion is entitled to much weight), "According to my views, then, pure tuberculosis commences when fats, properly acted upon by the pancreas, first cease to pass in normal proportions into the blood."

While many, at present, would be unwilling to admit all that Dr. D. claims regarding consumption, yet few but who will admit that the non-assimilation of food is a potent means for preparing the system for the inroads of this dire disease.

I quote an illustration from the doctor's little work on the first stage of consumption: "This may be illustrated by the case of an oil lamp. If the oil is not renewed, we may watch it gradually disappear as the flame burns, till at length a moment arrives when the last drop has left the wick, and the wick itself begins to burn. The wick may be saved at any time previous to the disappearance of the last drop of oil by supplying fresh oil to the lamp. I limit the first stage of consumption, then, to this period before the wick begins to burn. It is impossible, then, to exaggerate the importance of this true first stage of consumption when rightly understood."

We have enumerated two noticeable indications of this failing stage,—weariness and loss of appetite. A few other points remain to which we would direct attention, not so much as symptoms of disease for the physician's guidance as indications of decay, to which we would more particularly direct the attention of those who have the care of the young of both sexes. It should always be borne in mind that between the years of puberty and twenty-five the deaths by consumption reach their maximum, and yet it is comparatively rare to see these young people carried off from other diseases at this early age.

One reason for this lies in the fact that between the ages of fifteen and twenty-five the young of both sexes lead, as it were, a life by themselves,—too old to be watched and cared for by parents or guardians, and too young to properly care for themselves. In many instances tossed about upon the turbulent sea of life, with their bark untried and unfinished, inexperienced, they venture and assume risks undaunted, which, in after-years, would seem appalling. They not only assume risks, but they assume them when the system is least prepared for them; and this is one reason why so many contract consumption in their early years.

As the vital fluid runs low—as so well illustrated by the lamp—the different organs begin to show signs of decay; for instance, the eyesight. We do not remember to have seen it spoken of in the books as an indication of approaching consumption, but we certainly have noticed it in experience. A young man wears eyeglasses, and he is voted a snob at once. A

young lady puts on spectacles, and society says, "How sensible! She is near-sighted, and, like a girl of good sense, she wears glasses." We see no reason why one should be blamed or the other praised. The sight fails prematurely, and aid to vision is invoked. Now, what occasions this loss of sight? We do not claim that it necessarily foreshadows consumption, but it is generally one indication of decay.

We have often been struck with the great number of young invalids who wear glasses. But it may be answered, near-sightedness is inherited, and the eyes are defective in shape. True, but why is it that the eyes of the brothers and sisters are not also defective? Why is it that the son leaves the farm a robust, hearty boy, with splendid eyesight, and returns, thin in flesh, with a poor appetite, "a little bent," and with glasses on? We venture the assertion that if it was put to the professors of the colleges, they would tell you that the glasses are generally at the head of the class. They are worn by those who "burn the midnight oil,"—by those who care more for a good education than they do for their health.

And here we would enter a solemn protest against midnight oil. We firmly believe that it carries as many bright and shining lights to an early grave as midnight dissipation. The only difference is, the one is a sensual while the other is an intellectual dissipation,—both tend to premature decay.

Cold extremities are an indication that the circulation is not as strong and vigorous as it should be, and where cold feet are habitual, extra vigilance should be

exercised. Consumption, from first to last, is characterized by cold and pinched extremities. Occasionally the contrary is true,—the hands and feet burn. In both cases the circulation is abnormal.

A healthy child with a vigorous circulation throws the clothing off at night because it feels too warm, and a hearty boy refuses to wear an overcoat in winter because it feels oppressive. He consumes much food, and a healthy digestion soon converts it into good blood, and a vigorous circulation sends the warm fluid rapidly through the body.

Not so with the invalid or old persons. They chill easily, and, once chilled, it is difficult to warm them. The vigorous circulation of health is gone; the tonic elasticity of the arteries is impaired; the beating of the heart is quickened, but the pulse is weak. In this debility of the first stage the heart seems striving to make up in rapidity what it lacks in volume. Oftentimes the watchful physician suspects the approach of consumption by the pulse alone; it beats too rapidly.

In the first stage of consumption the mind is impaired, to a certain extent. The muscular system being impoverished, it is brought into subjection by the nervous, and the mind may be unusually brilliant or excited, as with scrofulous, brilliant children. It is a brilliancy which characterizes a fever, to be followed by a corresponding reaction; and then the mind is desponding, and shows marked evidence of weakness,—little things excite, please, or irritate; all interest in study or literature is gone; the mind, like the body, becomes weakened, and cares are a burden.

In this nervous, weak, and unsettled condition, when encouragement is needed, and assistance and sympathy are absolutely required,—when nature cries aloud for it, and cries bitterly,—in nine cases out of ten it is refused or withheld.

If the unfortunate person be a young man, and at home, the father shows by his actions that he is vexed and disappointed,—his son is not going to amount to anything after all. Perhaps a sudden light dawns upon the father, and he “sees through it.” The young man smokes, and he is upbraided for it; or he is out late at night, or some other little vice is discovered, and the *boy* must bear the blame. Perhaps the good mother, by the advice of some thoughtful neighbor, deprives her son of the only article of diet which tastes good to him,—his coffee.

The world is always ready to trace out, link by link, the chain of circumstances which one’s indiscretions unwittingly forge, binding affliction to them. How often do we seek out and skillfully trace the step-marks, leading others to trouble, instead of manfully lending them a helping hand to assist them out of difficulty! Have you never seen a young person hurried on to the grave by the frowns of a *virtuous* community, when their assistance and sympathy would or might arrest those steps?

We trust our readers will excuse the digression, but we would like to say a word for the young man who is reaping his “wild oats.” Frequently a young man, exhausted by vice and dissipation, enters the first stage of consumption. In the first place, it is unnecessary

to tell him that his conduct has brought him to this strait. He knows it only too well; no one but his physician knows better than himself how this fact is impressed upon his mind. This knowledge haunts him by night and by day. While this preys upon his mind, medicine will not relieve him; if the finger of scorn is pointed at him, remedies are useless.

While we abhor guilt, and would be the last to wink at a young man's faults and vices, so would we be the last to sit in judgment on him. Young men often inherit these vices, and parents should always remember that they often entail their vices and propensities upon their offspring; and remember, when you wring and tear an unfortunate son's heartstrings for the last item of his confession, your Saviour did not do that,—he simply said to the woman taken in adultery, "Go, and sin no more." To the young man we would simply say, a course of dissipation and vice is equivalent to the first stage of consumption.

Now, supposing the true first stage of consumption to exist, in what way does the deposit of tubercle in the lungs commence? Does this relaxed condition induce the deposit? Is tubercle deposited simply because the system is reduced? We think not; we think this first stage of consumption is also the first stage of many other diseases.

In peculiar regions, where diseases of the bowels prevail, as in warm climates, this enervated condition tends to develop diseases of the bowels and liver, or a miasmatic fever engrafts itself upon a system so debilitated as to prove an easy prey; while in a cold, damp

climate, *consumption* is the avenger of the laws of health transgressed. And, again, predisposition and occupation often decide between the forthcoming disease. But this we will discuss in another place.

The body, in health, if properly cared for, protects itself against cold, or accommodates itself to the atmospheric changes,—just as the eye in health accommodates itself to the light. But the weak or diseased eye does not possess this power. A light that would be healthful to a well eye would destroy the sight of an eye diseased. So with the body. A slight change in the weather for the worse, or a draught of air, would, with the weak and debilitated, produce a cough or a cold, and the weakened or depressed condition of the body would render it difficult to throw it off; and yet, at first, the cough may be never so slight. Maybe it is a mere *hack*, but it will not yield. It does not distress, it simply irritates. It grows gradually worse, but yet little is thought of it, till presently night-sweats and a pain in the lungs commence; then the disease is well marked.

Now, the blood being poisoned by hereditary taint, and debilitated by previous ill health, flowing sluggishly through the lungs, deposits its poison in the lung-fiber. But why, it is asked, is the tubercle deposited in the lungs? We answer, because the lungs present a large irritated surface; oftentimes they become congested, the blood does not descend in full force to the extremities, but remains in the lungs. Perhaps a familiar illustration would not be inappropriate.

So long as the channel of a brook remains unobstructed, the water flows on, and leaves no sediment or impurity,—its pebbly bottom is clear; but dam up that stream, or cause the water to run sluggishly for awhile, and then carefully draw off the water, and a thick sediment of mud is discovered on the bottom.

The damming up of that stream did not make the mud; the apparently pure water always held it in solution, but the force and vigor of the current kept it moving. So with the tuberculous poison,—health renders it innoxious, but sickness develops it.

It may be deposited in other organs besides the lungs,—in the brain, as in tuberculous inflammation of the brain, or in the bowels. We doubt not much of the dysentery in the South is tuberculous. Tubercle is also deposited in the hip-joint, and in other joints.

In summing up, we would say that tuberculous consumption rarely, if ever, attacks a healthy, robust person. We do not believe that consumption is necessarily the immediate result, or a symptom, of diseased vitality, any more than the mistletoe is necessarily a part of the tree to which it attaches itself, or is the outgrowth of a decay in the tree. But we do hold that a diseased and lessened vitality prepares the way for this terrible disease. The simple wound made with the knife of the dissector is of small importance of itself without the poison of decayed animal matter. It is not a part of the poison; yet without this small abrasion the poison would be innoxious. But before death closes the sufferings of the doomed man, that little wound has assumed terrible importance. It was the first stage of the fatal

disease. The dissector then learns this lesson : to avoid the results of a dissecting-wound, don't cut your fingers.

Those who are predisposed to consumption should learn the lesson of avoiding, or remedying, the first stage.

CHAPTER II.

CONSUMPTION—ITS CAUSE.

WHAT causes consumption ?

It would be useless to enumerate all the many causes which have been assigned as the origin of this disease. We will present some of the most important ones.

Various depressing causes, working together, may produce a lessened vitality,—such as grief, anxiety, want, intemperance, etc.,—and consumption may follow. But yet we would not assign them as the exciting causes of lung diseases, because they have nothing to do with the lungs. Some claim that the depressing effect of sorrow and anxiety produces a slow and labored respiration, and the lungs are not properly inflated, in consequence of which they become diseased. Other hygienists say that tight-lacing produces consumption, by constricting the lungs. Vitiating and impure air, say others, is the cause of much consumption. Pastry and late hours, say our New England mothers, produce the disease.

Now let us for a moment look at these causes, in the order in which we have enumerated them.

First. Why should a slow and labored respiration cause consumption ? A slow respiration is normal ; a

rapid respiration indicates a congested and burdened lung.

Second. Tight-lacing. A great majority of those who die of consumption wear no stays at all. Tight-lacing is surely a great evil, and does much harm; but we think that its ill effects are more apparent upon the contents of the abdomen than upon the lungs. And, again, tubercle is deposited, as a general thing, in the apex of the lung, where there is no constriction.

Third. Vitiating and impure air is the only air that nine-tenths of the world breathe at night. Look at the shanty, tenement, and slave population of the United States, and the Indians, and the Esquimaux! True, many of this class of people die of consumption; but, proportionately, no more than those who breathe comparatively pure air. Thousands are annually carried off, *indirectly*, by these causes, from consumption. All causes of this nature induce a diseased condition, and, in a measure, weaken the lungs, thereby exciting a sort of artificial predisposition to consumption; but yet, all of these causes combined fail to give a reason for so much consumption (we speak now of the disease in North America). They do not give us a satisfactory reason why consumption is more frequent in one part of North America than in another part; and, before proceeding further, let us see what parts of the North American continent suffer from consumption, and what parts are exempt.

Extending through more than 70° of latitude, we have embraced in its borders all the climates of the world,—perpetual ice and perpetual summer, with all

its intermediate variations. In the Arctic regions, including Greenland, Iceland, and Alaska, consumption is very rare; some writers deny its presence altogether in those latitudes. Yet think what a vitiated air the natives sleep in! We can readily believe its rarity, but would be unwilling to believe in its entire absence in any part of the world, as consumption, we think, is a universal disease.

Leaving the frigid, we enter what is known as the "cold zone," lying between 47° and 60° . This region is sparsely settled, and we know little of its medical geography. Next to the cold zone lies the temperate zone of North America. Bounded on the north by latitude 47° , the zone descends to parallel 37° . It includes part of the Dominion of Canada, all of the Northern and New England States, as well as the border States.

In this belt or zone consumption prevails to a great extent. In some parts of this district the disease reaches its maximum. On the north Atlantic seaboard consumption is the most fatal disease. In some States fully a fourth of the deaths result from consumption. Largest in mortality is Massachusetts.

This region is in every respect healthful, and, with this one exception, the mortality from all other diseases is slight.

We give on the next page the mortality from consumption in the different States. These statistics are from the census returns of 1860, a report, in many particulars, incorrect; but, for the purposes of comparison,

it is in the main correct. The returns of 1850 corroborate the following estimates.

	1 in		1 in
Massachusetts . . .	250	Indiana . . .	760
Maine . . .	280	Tennessee . . .	770
New Hampshire . . .	280	Louisiana . . .	850
Rhode Island . . .	300	Illinois . . .	880
Connecticut . . .	360	Missouri . . .	900
Vermont . . .	400	Iowa . . .	902
New York . . .	470	Kansas . . .	910
New Jersey . . .	490	Minnesota . . .	1131
Delaware . . .	550	North Carolina . . .	1300
Maryland . . .	570	Arkansas . . .	1322
Pennsylvania . . .	580	Mississippi . . .	1420
Michigan . . .	630	Texas . . .	1430
Kentucky . . .	660	Florida . . .	1440
Ohio . . .	670	Alabama . . .	1618
California . . .	720	South Carolina . . .	1720
Virginia . . .	750	Georgia . . .	2150

In the above table we have the whole climatic history and range of consumption. We observe that the New England States lead in frequency, next the Middle and border States, then the Western States, and least in frequency the Southern States. The disparity between the extremes is very great. In Massachusetts there are ten deaths from consumption, while there is but one in Georgia. Why this difference? According to all the popular hygienic theories of the day it is inexplicable. The *physique* of the inhabitants of New England is unexceptionable; their life is an out-of-door life; they are hardy, strong, and industrious. Agriculture, manufacturing, lumbering, and fishing are the chief employments of the people in most of these States,—and where could we find callings better suited for the

full development of manhood than these? The women are no less hardy. Who has not heard of the mothers of New England? There cannot be found a more robust, healthy class of women in the world than they, — trained from girlhood to work, as they are taught to read, trained to believe that late hours, high living, and dressing are so many highways to perdition, — virtuous and womanly, rosy-cheeked and healthy-looking are our New England cousins.

With the exception of consumption, there is no part of the world, we think, where health prevails to the extent that is true of the New England States. For instance, in Connecticut in 1860 there was but one death in a hundred of the inhabitants from all causes combined, excepting consumption; while in Arkansas, a State of about the same population, there was one death in every fifty-three of the inhabitants, excluding, of course, the same disease.

Trouble, anxiety, and poor living we have mentioned as causes assigned for consumption. Where in the whole world is there less cause for trouble than in Vermont? Nestled away so snugly among the Green Mountains, a perfect paradise is Vermont during the summer months, with her mountain scenery, her limpid streams, and clear lakes. Churches and school-houses dot the country in all directions; there pure morality reigns supreme. Poverty is almost unknown, drunkenness is extremely rare, and yet consumption hangs like a pall over the "land of steady habits."

On the other hand, how different everything in the Southern States,—more especially before and during

the war! Servants there were in great abundance for all the physical duties of life. Then how could physical vigor be developed where there was no exertion? Why did not the slave population, three millions strong, suffer from consumption? You tell me that consumption is not common to the African race. It is very common among them in the North, —very common indeed. A genial, warm climate, a soil easily tilled and producing largely, and an abundance of servants to do all the work necessarily had effect upon the people; and we would not expect that vigor and muscularity which so characterize the inhabitants of northern latitudes, who have been accustomed to manual labor; and moreover, we think the “peculiar institution” has been a great moral if not a physical burden, which has weighed them down with cares and anxieties and a thousand evils which spring from and accompany slavery.

But with all these moral, social, and physical evils to contend with, the sunny South has been spared the desolating ravages of consumption, because she has a climate unfavorable to the generation of the disease.

We have thus considered in comparison the two sections of our country. Where there is the least apparent cause for sickness, there we find the *most* consumption; where we should expect, according to the popular ideas of hygiene, to find the most, there we find little or no consumption.

Before proceeding further we would say a word about statistics.

A medical friend said to us, some time since, “You

can prove anything you wish of consumption by statistics." To a certain extent this is true. For instance, take the army medical statistics of this country and England. In the first place, take the material constituting the army and navy. They are composed of men pretty much of the same age (in a medical sense), intemperate in a greater or less degree, and subjected to the same influences when serving together. But in different departments how all is changed!—habits, discipline, food, quarters, etc. The returns of the U. S. army prove: First, that consumption is greatest where there is the highest temperature and the greatest amount of rain (this would represent the Gulf States), and according to the army returns one of the least frequent among the stations is where there is a cold, equable climate, a high elevation, and much rain. According to the army returns, there is more consumption on the south than on the north Atlantic coast. Now, see the fallacies of this reasoning. When a person in the army contracts consumption, he is at once discharged and lost sight of,—consequently the result of the case is unknown. Again, none but *healthy, strong* men are enlisted, and they are subjected to a rigid physical examination; and again, these statistics, imperfect as they are, deal only with a class of persons whose age, sex, and occupation are not favorable for the development of consumption. With acute diseases these statistics are invaluable, but with the *mortality* of a given section of country and of diseases incident to all classes of residents these reports are worthless. As well might we judge of the mor-

talities of New York City by the reports of the Women's Hospital. And yet theories are erected and books written in Europe and America upon the information gleaned from army statistics.

Not so with the census returns of a country,—they deal with all classes of men, women, and children. Errors occur, it is true; but in the aggregate the returns give as correct an estimate of the diseases of a given State as do the political returns give an estimate of the political opinions of a State, notwithstanding the irregularities incident to voting.

Now, what are the deductions to be drawn by the comparison of the census returns? We believe that statistics and experience teach us that *cold* and *moisture* are the great predisposing causes of consumption. We would state, however, our belief that cold and moisture often affect persons differently. Those who are predisposed to weak lungs or consumption, of course *suffer most* from a damp climate; next those who are weakened by or rendered liable to diseases of the lungs by reason of any of the depressing causes, which include the different callings, conditions, and habits of the people. These, we say, are doubly liable to the chilling effects of moisture.

If we desire to preserve fruit from decay, we first select the best specimens, carefully discarding all that is imperfect or injured in any way and all that is immature in growth. Impaired fruit, we know, decays first. But is this all that is necessary to be done with the fruit? By no means. We must next select a dry place in which to store it, for without this all fruit will

decay, whether it be perfect or not. We know that a dry, well-ventilated cellar will preserve impaired fruit longer than a damp, unwholesome cellar will preserve good fruit. We know, moreover, that fruit that is impaired rots first, and that this impairment, no matter how occasioned, is the *first stage of decay*.

Let us glance at the different States in the order of mortality and note the peculiar characteristic of each State as regards cold and moisture. We observe that Massachusetts leads the way in the frequency of consumption. We think on account of its dense population, it has a larger mortality than Maine.

We find as we descend the coast from Maine consumption gradually lessens until we reach Pennsylvania; next we find Michigan, situated between two lakes; then Ohio and Kentucky, materially affected by the lakes on the north and the Alleghanies on the east (mountain ranges always produce more or less moisture); from Ohio we strike across the continent and find that California suffers next, which is on the same parallel. California is situated, as regards moisture, much as the New England States, but the temperature is very different. Next come the western and upper tier of Southern States; interlarded among these we find Louisiana. We account for the disease in this State by two causes: First, New Orleans contains a large population of a mixed race, densely crowded, and wherever a densely-crowded, indigent population exist, the evils attendant upon cold and moisture are to be found; second, New Orleans is below the level of the river, which of course necessitates moisture; more-

over, it is subjected to violent northers during certain seasons of the year.

Now, by glancing at the foregoing table, the reader can account to himself for the prevalence of 'consumption in all the so-called consumptive States,' by simply applying to each State the rule of cold and moisture.

North of 35° cold winds and rains prevail with more or less frequency during three seasons of the year; besides, the different mountain ranges prevent the free evaporation of moisture. Passing from the coast to the interior, consumption prevails, but not to the extent that it does on the seaboard. The same influences prevail in all of the Northern and Middle States, but distance from the coast materially modifies them.

We have hurriedly considered the consumptive States; we will now for a moment look at the Southern States, called the "subtropical zone,"—North and South Carolina, Georgia, Florida, Alabama, Louisiana, Mississippi, Texas, and lower California. More rain falls in these States than in the Northern States, but the climate is much warmer, causing more disease, but of a very different type, yet fully as fatal. Fevers of different types, dropsies dependent upon liver diseases, different acute diseases of the respiratory organs, such as inflammation of the lungs, etc.

Cold and moisture excepted, how can we account for the large death-rate by consumption in the New England States? It would naturally occur to some that poor living and hard work in some of the New England manufacturing towns, with the close air of the factories, would materially affect the death-rate.

But in Maine and Vermont there are no large manufacturing towns and but little poverty, yet one-fourth of the deaths are from consumption.

Is it an inherited predisposition that produces consumption? If such were the case, why do not the Western States suffer in like proportion, as we are mostly descended from New England parentage? From whom did this predisposition originally spring? The early settlers of the New England States migrated from the same mother country as did the inhabitants of the South, and yet how differently they suffer from this disease!

Like causes produce like effects on like subjects; if we are begotten of tuberculous parents, we shall suffer like them, *provided we are subjected to like influences*. Change the influence, and in a great measure the predisposition is modified.

Prof. Bennett advances the idea that the weak and puny ones of the world are *weeded out* by consumption. We doubt not he would readily admit that in different climates, subject to *other* diseases, the weak ones are cut off by the diseases peculiar to their own climates.

We think the rule may be safely adopted with regard to consumption, that so long as the climatic influence is the same, transmission to the offspring will of necessity follow; but change the surroundings and the climate *permanently*, and the predisposition is in a great measure overcome.

A young Bohemian entered our office the other day with a brother afflicted with goitre, who had just emigrated from an Alpine home. He said, I have lost

my lump (referring to his neck) since I came to America, and I tell my brother that he will lose his. Will the offspring of these brothers suffer from goitre in America? Of course not. Yet their ancestors for ten generations may have been afflicted with unsightly necks.

Now a few words as to the contagiousness of tubercle. There seems to be a growing disposition with the profession to believe that consumption is contagious and may be imparted from one to the other. We do not believe that it has yet been satisfactorily proven. The inoculability of tuberculous matter does not concern us, but the contagiousness of consumption does concern all. There is scarcely a physician but what can furnish an illustration from his practice of a case which looks "very like contagion." The instances are somewhat like the following:

"A healthy-looking and apparently sound wife nursed a consumptive husband for many months; before his death she commenced to fail, and seven months after his death died of her husband's disease."

Upon instances like the above is the theory of contagion built. Now, what do such cases prove,—the contagiousness of consumption? We think not. To us they prove that nothing in the world will so surely tend to develop consumption in one so predisposed as the anxiety, the confinement, the exertion, and weariness consequent upon nursing a beloved friend through weeks and months of continuous suffering.

We are surprised that more devoted wives do not fall a victim to disease by reason of their kind atten-

tion and heroic devotion to their sick husbands or children.

Kind, thoughtful, and attentive to every want and whim of her sick husband, and with the cares of a family upon her hands, the loving wife is apparently never absent from his bedside. When the husband, by reason of his suffering, is cross and petulant she is patient and kind. She allows no one to cook for him but herself, "because husband rather have me cook for him." In the early part of the night she sits by his bedside, with open window, and fans him, "because his fever is on." When he sleeps she falls exhausted upon a lounge, "for fear of disturbing him;" but wakens when the cold sweat chills him, and, thoughtless of her own health, she nestles up to him, that she may impart warmth to him; and with her own garments wetted with his perspiration she gets up and shuts down the window, and in so doing becomes chilled; dressing herself, she puts the room in order, cares for her waking children, and prepares an early breakfast for her husband, but scarcely notices the lack of her own appetite.

In some instances such a nurse *follows* her husband, but not from contagion,—sleepless, untiring, exhausting devotion carries her off; and yet *these* cases are extremely rare in comparison with the numbers who die of consumption.

It is a significant fact that the nurse never contracts the disease *before* the death of the loved one. If death occurs, it is *after* the shock, after the first outburst of grief; it occurs during the period of ex-

haustion and despair, "when there is nothing now to live for."

And again, it is rare to see a case of so-called contagion unless there exist a feeling of affection between the nurse and the afflicted. A hired nurse never contracts the disease, nor do other members of the family, unless there be a special tie which binds them.

But you would not advise a healthy person to sleep with a consumptive, would you? a reader may ask. We should advise those who nurse the sick to be very careful of their own health, as it is trying and exhausting work, and when the frame is exhausted and worn out, then it is an easy matter to catch cold; and the associations of the sick-room, as well as the sympathy and grief excited by the sufferings of the sick, place the system in a poor condition to rally from debility or to throw off a severe cold.

A word more regarding cold and moisture. It should always be borne in mind that the evil effects of cold and moisture can be experienced in a warm and dry climate or in a cold and dry climate. For instance, if one sleep or live in a cellar in a dry climate, the same ill effects will be experienced as if one lived above ground in a moist climate. But what we would particularly call attention to and guard our readers against is the abominable habit of shading a house with trees or foliage, by this means keeping out all the sunlight where it is needed the most. It is a well-known fact that vegetation will not thrive without sunlight. How, then, can we expect animal life to thrive without sun?

Now, to bring this matter right home to our readers, and make it directly applicable, we ask each one for himself to look around among his friends and see if there is not an invalid of a greater or less degree in the houses that are densely shaded.

It should be borne in mind that the great world which we inhabit is but an exaggerated garden-plot, and the same causes which make a hundred square feet of ground damp and chilly, in an exaggerated degree determine the climate of a continent.

The practical bearing of this fact is that if circumstances do not permit of our living in a dry climate, we can do much to render our own immediate little climate free from the great producers of consumption, —cold and moisture.

CHAPTER III.

CONSUMPTION—ITS CURABILITY AND TREATMENT.

BEFORE entering upon the discussion of the treatment of consumption, we would for a moment consider its curability, prefacing our ideas with a few general remarks upon “consumptives.”

Thousands who annually die of consumption (I refer, of course, to the wealthier classes) have but themselves to blame. They contract the disease by their own indiscretions and thoughtlessness, and grow worse and die from the same causes.

Prof. Bennett, of Edinburgh, writes as follows of this class of persons :

“Foolish people have scarcely a chance of recovery ; they must perish. They generally do everything that is wrong and pernicious, to please their own passing whims and fancies, and often look upon the friendly physician who tries to rescue them from death as one to be deceived and deluded. I repeat it, such unfortunate people have scarcely a chance of recovery. They have neither the sense to follow the right course when it is pointed out to them or to grasp the hand of fellowship and sympathy when it is held out, nor will they sacrifice pleasure, money, or ambition to the pursuit of life. Indeed, I consider a weak, vacillating,

peevish tone of mind, or an inordinate appreciation of and clinging to the enjoyments and passions of life, to be as unfavorable an element of prognosis as any of those already discussed. Such mental conditions all but certainly preclude recovery, however favorable the case may otherwise be."

The above sounds discouraging, but is it not true? Have we not known just such instances?

The question now arises, is consumption a curable disease? There is not a doubt of it. In what proportion of cases is it curable, and what kind of cases? is now asked. We answer that it is just about as curable as a burning house is susceptible of being saved. It is a fact well known that every year thousands of houses commence to burn which are extinguished with but little damage; so we believe thousands of persons annually contract consumption, and by timely medication, a change of air, or rest, are cured with but little damage to the lung tissues. We believe that many of these sick spells, lasting perhaps a month or more, characterized by the symptoms we have enumerated in the first chapter, are but the germinations of consumption, especially if there be a predisposition thereto.

As we have before stated, there are but few houses but which have at some period of their existence been in great danger of conflagration, yet they escaped with a singeing; others were well under way, but judicious and timely assistance saved them. Now and then we see a house which was saved when enveloped in flames, but these cases are few, and but a *part* of the house remains.

Now, most of these conflagrations could have been saved at the outstart with very little trouble; but not with the same ease in all cases, because some houses are so constructed that a fire will gain great headway in a short time. These houses are *predisposed* to fire, because they are built of inflammable material,—double precaution is requisite with such buildings. But *few* buildings are entirely fireproof.

We now press our good-natured fire-engineer to answer for us a few more questions. Can you put out fires? “Excuse the question, Mr. Engineer; but, as we doctors have to answer just such vague questions, we take the liberty of propounding them to you.”

“As a general thing, we hope to be able to save a burning building, if called in time, providing our efforts are seconded by others; without their assistance we can do nothing. If twelve men are giving orders and all are obeyed, the house stands just twelve chances of being lost. Everything depends on whether a sensible man owns the house. If he does, he will *trust* the department. The situation of the building must also be considered, whether it be exposed or not; as much depends upon the wind as upon the material of the building,—if the wind is unfavorable, a very little fire gains a very rapid headway.”

There are three different treatments recognized in the cure of consumption,—medical, hygienic, and climatic. We shall say but a word on the first, but little on the second, and dwell upon the third method of treating consumption.

It should always be borne in mind that there is no

specific in the treatment of consumption ; the different symptoms of the disease must be treated as they occur. Cod-liver oil is often given as a *specific* in the treatment of the disease, but it is simply a *food*. Suffice it to say, that the old theory of treating the disease by the "lowering treatment" has been superseded by the "building-up treatment." Tonics are now used, and, under certain circumstances, stimulants.

Hygienic treatment is, strictly speaking, no *treatment* at all. It consists simply in living in obedience to nature's laws.

Now, nature is not an arbitrary or exacting law-giver ; on the contrary, she is very liberal and allows mankind a wide range ; but yet her laws are as inflexible as the laws of the Medes and Persians.

The theory of many *popular hygienists* seems to be this : if we transgress a law of health, we must restore to her tenfold. If sickness be produced by a lack of cleanliness, then the divinity of cleanliness is to be appeased by ten baths a day ; or if we allow our muscles to become, for want of proper exercise, weak and *flabby*, then we must sacrifice to an outraged Hercules at least half of our time in a gymnasium ; or if we have been in the habit of over-indulgence at the table, we should do penance on apples and rye bread, eschewing all flesh ; or if we are not fond of a meat diet, and eat too many vegetables, then raw meat must be our diet.

Now, we respect these hygienists, of all schools ; they do much good, an immense amount of good,—they are on the right track. But we think, like all

good reformers, they are apt to carry matters to extremes.

For instance, Dr. Dio Lewis, of Boston, has made a great deal of popularity and money out of gymnastics, and undoubtedly has accomplished much good; but, puffed up with the pride of success, he is reported to have issued an edict against the use of tomatoes as an article of diet, as, he asserts, they loosen the teeth and make the gums bleed, etc. Perhaps the worthy doctor has noticed this peculiarity with some, but there are several millions of us who notice nothing but good effects from the use of tomatoes.

Then again there is a class of hygienists who have observed that cows thrive well on a vegetable diet,—therefore man should eschew meat. Others notice that wolves never have the consumption, and they reason that it is because their diet is flesh, and consequently meat should be eaten raw. Others again recommend the grape cure for consumption. Then again there are the movement cures, and the different baths, and long walks, and early rising, and open windows, etc., each of which teaches its peculiar lesson and is of value in moderate proportions, and I should earnestly recommend them to consumptives,—that is, a little of each. Baths enough to keep clean, sleep enough to satisfy, walk enough for exercise without weariness, meat and vegetables enough to appease the appetite. Add to this a clear conscience and enough *common sense* to understand the difference between too much, not enough, and sufficient; and then rest as-

sured that hygiene has done for you as much as lies in its power.

Two things, however, we should advise the invalid to beware of,—exposure to the night air and *uncommon sense*. The avoidance of the former will do much to prevent the contraction of fresh colds, while the avoidance of the latter will insure a mental equilibrium which is truly refreshing, not only to the patient, but to his physician and every one else.

The human mind is so constituted that it can comprehend only *common sense*, and this seems to tax the minds of many; but when humanity strives to grasp more—the patient or the doctor—the result is a failure.

When the ship is disabled, it is no time to run risks, and try nautical experiments, and explain complex theories of navigation; no, then is the time to return to first principles, and simply float and steer by old landmarks. The consumptive will do well to always bear this in mind.

We now come to speak of climate in the treatment of consumption. This treatment is not new, nor is it of very ancient origin; it has seemed to keep pace with the conveniences of travel, and as a natural consequence is yearly becoming more generally adopted. In England alone some twelve or fifteen thousand, it is estimated, annually visit the different resorts in search of health.

We believe that a judicious selection of climate at the right time is of all treatments the most beneficial.

The custom seems to be growing of dividing climates or health resorts into endless varieties, to suit the

condition of innumerable diseases. In America the subdivisions have not yet been made, but abroad there is no keeping pace with the climates.

There is a climate for the first stage, for the second stage, and for all the other different stages; and not only this, but every physician of eminence has a series of climates of his own to recommend, and moreover these different climates must be visited only at certain seasons of the year. In many of these resorts, if an invalid unfortunately lingers too long, he is overtaken with a month or two of plague, dysentery, or cholera. We have but little confidence in such climates; a climate beneficial for only a few months is hardly worth visiting.

Eschewing the numerous subdivisions of climate so much in vogue, we will consider the general therapeutical effect of the climates recommended for consumptives.

As a sedative climate, Madeira is typical. With an annual range of not more than fifteen degrees, its climate is equable, and as to its effects I quote Dr. Stone, a writer in the *London Lancet* for 1866: "The first effect of the climate is soothing; it is not until some months have elapsed that the balmy influences of equable temperature and the soft breathing of moist, warm sea-breezes become absolutely cloying and tend to enervate both mind and body. Some temperaments resist the approach of this *dolce far niente* longer than others. Not a few, with well-meant efforts of resistance, pay by feverish attacks for unnecessary activity. All local varieties, however, are subordinate to the

dominant character of the climate, which is warm, equable, and moist, almost to saturation.”

Sending patients to Madeira is equivalent to poulticing them. A climate of this character bears the same relation to the body that a poultice does to a wound or a sore,—very grateful, and pleasant, and soothing in its effects; suppuration goes on nicely and with little pain; but, on the whole, poultices, unless carefully watched, do more harm than good; their use is not so much for making new tissue as for destroying the old.

Now, we can understand how delightful a few weeks in Madeira would prove to a consumptive, especially if he were lately from a cold climate. It would be enjoyed as we are now enjoying our spring (April 1). Two weeks ago we were in the midst of winter,—that is, so far as sleighing was concerned. It was but ten days since that we felt warranted in putting on our spring overcoat, but to-day it is too warm even for that, and we are compelled to put it aside; the streets are dry and dusty, except here and there a muddy place; the lilac-buds are opening and the gardens are being prepared for the seed; the weather is delightful and we are constrained to spend our time in the open air. But note the effect of the weather,—to-day we dine without an appetite, and the nights are oppressive, and our sleep is not sound and refreshing. Now, what has been the therapeutical effect of this weather? It has been decidedly sedative. A week since we entered into some out-of-door improvements with zest and relish; but the work remains incomplete,—we

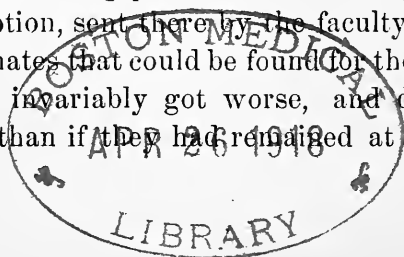
have felt too languid to finish it. We lounge in the sun, but do no work. A month more with no change would make us all sick.

A sedative climate is never cold, nor is it characterized by sudden changes, nor is it dry, nor is it exhilarating, but on the contrary it exerts its peculiar influence upon everything,—animal life moves slowly, the waters are stagnant, the inhabitants are generally thriftless and live a lazy life. A sort of “Sleepy Hollow” influence pervades everything.

Sedative climates are not popular with the profession nowadays for consumptives. Prof. Bennett writes in the *Lancet* as follows of this class of climates:

“Perhaps the most valuable and conclusive evidence on the subject is that furnished by the English and French army reports during the last thirty years. From them it has been established that soldiers suffering from tubercle of the lungs get worse in all warm climates, especially during the summer in the East and West Indies, at Malta, Algeria, etc. Consumptive soldiers are now sent home to a temperate climate from all these colonies.”

We quote further: “My old friend, Dr. Dundas, practiced for twenty-five years at Bahia in the Brazils, a tropical climate, leaving in 1845. Many years ago he told me that during his residence there he was constantly receiving patients from Europe affected with consumption, sent there by the faculty as to one of the best climates that could be found for the disease. These patients invariably got worse, and died much more rapidly than if they had remained at home. So fully



did he become impressed with the conviction that the climate—a very healthy one in every respect but in its tropical character—was deadly to the consumptive, that if any of his own patients among the European population were thus attacked, he instantly sent them home to Europe.

“These facts are at once explained when we recognize the principle that pulmonary consumption is a disease of debility, of exhausted vitality, and not an inflammatory disease of the respiratory organs; that it is an affection in which the indication is to strengthen, to invigorate, not to calm and soothe symptoms. Warm weather produces a languor, a disinclination to take exercise and to eat, often a positive disgust for meat and for fatty substances, and interferes with sound sleep. In warm weather the natural desire is to remain recumbent, idle, and half dressed, to drink lemonade and eat ices. The attempt to take a fair amount of nitrogenous and carbonaceous food, from duty, is followed by a disturbed condition of the liver and of the digestive and intestinal organs generally, to which there is so great tendency at all seasons in the consumptive. I only ask, in common sense, is such a state of things, is such a temperature or a climate that produces such results, to be relied on in a case of debility?”

We heartily concur in all that the doctor says with regard to climate. His theory is good, excellent,—it could not be improved upon; and if his application had been Minnesota, we never should have written a line, but recommend Dr. B.'s book. He has very

properly inveighed against a sedative climate and recommends a tonic climate. But further on he tells us where his sanitarium is located, his "tonic climate:" "I have come to the conclusion that the most favorable and accessible climate for chronic diseases of the respiratory organs, and especially for phthisis, as also for all other diseases characterized by organic debility, is the undercliff of Southern Europe, or the coast ledge which forms the north shore of the Mediterranean from Cannes to Pisa."

Along this undercliff Dr. Bennett has discovered, between the shore and the perpendicular rocks, some quiet little nooks and crannies in the rocks, "where the appetite and digestion improve, assimilation and nutrition become more natural, and the progress of the disease is averted, and nature at once begins to repair existing mischief." Providing of course that his patients take proper care of themselves and are not "too far gone." "Madeira was supported by the medical profession as long as it was thought such a climate answered its requirements, which were then moisture and warmth; now that it does so no longer, that other views prevail, that a cool, bracing, tonifying climate is demanded, Madeira falls in professional estimation, and this undercliff rises."

In another place the enthusiastic doctor writes: "I found and introduced to the profession the undercliff as an accessible locality, where the conditions required to apply the vitalistic doctrines of the day exist to perfection."

Now let us see what are the characteristic features

of this little Paradise. "The dry, mild, sunny winter climate acts in various ways. Firstly, the patient is removed from the pernicious influence of the cold moisture of the northwest of Europe, and very likely from unfavorable and perhaps unrecognized home influences. * * * Fourthly, there is, in favorable cases, a steady improvement of the vitality of the general health under the influence of the intense light of the sunshine, of the dry atmosphere, and of the daily out-of-door life. No doubt also there are profoundly different electrical conditions as well as social, which may contribute to rouse the latent powers of the economy."

But alas for the fickleness of nature in this little spot "perfection!" "This shore-line" is not always exempt from the inclemencies of less sheltered localities; for, writes the candid and truthful doctor, "The winter of 1868-69 presented some exceptional characteristics in the south of Europe and on the Genoese Riviera as well as in the north. Northwesterly Atlantic winds were much more severe and more prevalent than usual. Instead of losing their moisture on the mountains in the south of France, as generally occurs, they passed, still somber and rain-loaded, over the Maritime Alps, darkening the usually pure blue sky, cooling and moistening the atmosphere. Such was the meteorological condition, day after day, week after week, in January, February, and March."

But, strange to say, there was the same proportionate amount of amendment, and recovery was the same as usual. And yet in this undercliff the "vitalistic doc-

trines of the day exist to perfection." On a mere ledge, a dark cloud overhead, the rocks in the rear, and the water in front, for three of the invalid months!

In the *Old and New* for March, 1870, appears a letter from an invalid who sought this retreat for a winter (perhaps it was this very unpleasant winter referred to). We will quote extracts, but would advise all who are interested to read it entire. We should be disposed to look with much allowance upon the dark picture presented by our invalid of a winter in the south of France, did not Dr. Bennett himself prepare us for a gloomy picture by his own candor and truthfulness :

"Mentone certainly enjoys a lovely situation. The views from the pine-covered promontory of St. Martin, which separates the bay from that of Monaco; from the head of the grisly ravine through which runs the new boundary-line between France and Italy; from the cemetery above the old town of steep streets, strong smells, and swarming children—are alike charming. Orange- and lemon-groves and olive-orchards fill the picture, which is framed by the blue Mediterranean, forming the chord to a semicircle of gray, rocky hills, that rise sometimes two or three thousand feet, varied here and there by a red cliff or a white village. The curve of the coast-line is lovely, but the mountain-lines are hard. These last are often hid for days together in winter by clouds, and during these periods the walls of rocks imprison the imagination and depress the spirits. One longs for rain, for the night, for whatever will hide the inclosing walls. One seeks vainly

signs of life on the sea, out of which the sun rises with monotonous persistency ; but few sails appear, and no ebb tide relieves from the eternal attempt of the waves to macadamize the pebbles of the shore. Happy privilege of health, that found a day's entertainment in a bit of sea so seen as to seem bluer than usual, in a ravine unusually steep, or a lemon-tree unusually yellow !

“Those able to climb or to endure a donkey's method of ascending or descending an inclined plane, may find means of entertainment in the environs of Mentone ; but invalids are necessarily confined between the sea and the hills that begin to rise within a stone's throw of the beach. The only road by which a carriage can penetrate into the interior is that which leads to Turin, through a ravine deserted by the sun after noon, and haunted by a cold wind and by unwholesome smells, due to the oil-mills, which empty their refuse into the little stream that filters through a broad bed of pebbles and furnishes the washerwomen of the town with their supply of water. The road to the promontory of St. Martin, in the opposite direction, begins in the damp shade of huge olive-orchards and ends in a sharp sea-breeze. These and the drives along the coast to Monaco or to Bordighera are all. For walking on level ground, there is the esplanade behind your hotel and the one street of shops before your hotel. The noise and glare of the sea reach the first unimpeded, and are almost invariably accompanied by a chill, penetrating wind, which struggles for mastery with the sun between ten and four, and has its own way the rest of the time. A

quarter of an acre of rose-bushes, palmettoes, and castor-oil trees form what is called the *jardin Anglais*. On the benches here, or against the wall, consumptives cower while the sun shines; they disappear the instant a cloud comes and reappear with the returning warmth, like rabbits. In the street there is no sun, but there is less wind.

"This is all Mentone offered me during the warmest part of the warmest winter days. I never went out without deriving a chill from the wind or a headache from the glare, and I usually had both experiences. Within doors I could be more comfortable, if I did not sit by my windows, which there was little temptation to do, since there was little to see and nothing to hear but the Mediterranean.

"At Mentone it is impossible to escape the dull grinding of that sea under your windows, rarely in winter quiet for six hours, and often so noisy as to render sleep impossible. It is not the honest Atlantic roar, but resembles the scratching of some cowardly but cruel animal of the feline species.

"If the Mediterranean had furnished any delicacies for the table, I could have forgiven a portion of the annoyance it caused. But boxed sardines are better than fresh ones; swordfish is delicate but almost tasteless, and the same may be said of every other variety of fish we tried. Better articles come from Corsica, we were told, but Mentone has no direct communication with the island, and Nice eats all its products that arrive there. Our best fish—incredible as it may appear—came from the lake of Geneva, and, having

been packed in ice, generally reached us in good condition.

“Our fish came from Geneva, forty or fifty hours distant; our chickens from Strasburg, twelve hours farther; our butter from Milan; and our oranges—those worth eating—from Malta or Spain; the eggs of the hotel may have come from Timbuctoo, but a friend found five hens living two miles distant, who consented to lay between them two eggs every other day, at four sous apiece.

“As for bread, it was sour, sour, sour; made with sour yeast, and irremediable by the best butter. The same kind friend finally discovered a restaurant where one could have a loaf of ‘sandwich bread’ baked expressly, for a large consideration.

“As for beef and mutton, they were produced in the neighborhood, and were tolerable when not too recently killed and not too completely deprived of their natural taste by sauces, composed according to the principles of the French and Italian cuisines, mixed, as the Mentone dialect is according to those of the two languages. The vegetables were not intolerable; but it was only in his potatoes that our cook—as good for the rest as any in the place—excelled. For this fare and his bed one pays at Mentone from eleven to fourteen francs (from two to three dollars) a day in gold. Fire and lights are, of course, extra; so are exceptional dishes, or meals at exceptional hours, such as the sick always require.

“On my feverish days kind friends scoured the town in search of ice, but found only snow, or rather a mix-

ture of snow and gravel, too weak to cool wine, too dirty to put in the mouth, which had been brought from the neighboring Alps and cost ten cents or more a pound. One week, during which we enjoyed clear, cold weather, that braced like the good October days of New England, ice formed at night on the edges of Washerwoman River,—but then I needed it least.

“ Under such circumstances, imprisoned between the hard mountains and the noisy sea, with nothing to tempt a delicate appetite, with wretched circulating library novels to read, with little but consumptive and rheumatic society, with few distractions of any kind, alternating between sun that scorched and air that chilled without invigorating, welcoming the uniformity of temperature of rainy days and the relief they brought from the prescribed necessity of going out to the dreary beach, counting the days till my release from a life of which the dullness was only broken by neuralgia or some other old friend of the family,—under such circumstances four months wore away.

“ The ‘sedative’ climates—those of Pisa and Pau, for example—enjoy comparative exemption from chill winds and from scorching sun; but there is no exhilaration in a succession of days of warm rain, and he whose spirits are already depressed by sickness will pass a gloomy winter within sight of the Pyrenees or of the leaning tower.

“ In Algiers you are exposed to brain fever; in Rome to the Roman fever, the sirocco, the dampness of churches and galleries, the deadness of the deadest, and the dirt of one of the nastiest cities in the world;

and in Naples to the additional danger from the drains that empty into the bay under your hotel window.

"All the places in Europe to which invalids are sent by well-meaning physicians are thus open to serious objections from a sick man's point of view. The hope of blotting winter out of the year is a vain one. Gaining something on one side, you lose something equally valuable on another."

We quote Dr. Madden, who writes up Malaga at the expense of Mentone: "I do not believe, however, that the reputation thus acquired by Mentone as a winter resort for the consumptive will endure long. Any place may be thus written into vogue by a clever local practitioner, and this has been the case with Mentone, which is now crowded in winter by fashionable phthisical invalids. Dr. Bennett, in the first edition of his work on Mentone, says to live in Mentone is in reality like living on shipboard. Malaga is in my opinion *the best winter resort in Europe* for consumptive patients requiring a tonic winter climate. The situation of the town is peculiarly favorable, being placed in a deep and beautiful bay, surrounded by a fertile plain. The vegetation is tropical in character,—Malaga is one of the most southern points in Europe. * * * The hygienic condition of Malaga is still very defective; even in the best quarters of the town the sewerage was very defective. The main sewers, which run under the principal streets, were choked up with the decomposing accumulation of years, and, being provided with immense square apertures, through which the dirt is thrown into them in the center of the streets, and

which are danger-pits to the belated passers through these dark and narrow thoroughfares, the mephitic gases generated below escape freely into the atmosphere of the city. Such is, or rather was, the condition when I last visited the sanitarium. * * * Twenty-two epidemic pestilences have almost depopulated Malaga at different times between 1493 and 1804." Almost time, we think, for another.

We could thus criticise or copy criticisms on all of the other health resorts. Suffice it to say they are all in the south of Europe or on the African coast. The northernmost of these correspond with Florida, and these *tonic* resorts extend into the tropics. Each one claims virtues and peculiarities found nowhere else, and each resort has been "written up by its local practitioner, who reaps a golden harvest from the plethoric pockets of affluent patients."

And yet we should be the last to say aught against the honesty and integrity of such able men as Dr. Bennett; they are above deception, and we can but say we wish they had better climates to boast of.

Before proceeding further it would be as well to say that there is no occult, hidden peculiarity of a climate, which, like the virtues of a rare remedy, is only discernible by the skilled eye of science. No,—climate can be judged of by the laity as well as by the profession. A filthy, stinking town is simply what it looks to be, and should be shunned, no matter if all of the medical profession laud it to the skies for its agreeable and beneficial effect upon the lungs. As well might the profession recommend tainted fish as a diet because

Prof. Agassiz says that "fish are very rich in phosphorus" and the brain matter is also rich in phosphorus, consequently persons suffering with debilitated brains should eat fish. Now, in tainted fish phosphorus is being constantly eliminated, therefore it stands to reason that tainted fish are the best food for a weak-brained invalid. You exclaim that a person must indeed be weak-brained to submit to such a diet.

The authorities of London for years have been devising measures for improving the drainage of the city, to the end that sickness may be averted, and statistics are yearly proving the correctness of their reasoning. And yet Dr. Madden deliberately recommends *invalids* from England to spend the winter in the southernmost point of Europe, where the greatest mortality of the year is in January, "and where the principal streets are choked up by the decomposing accumulation of years." Think of it, you invalids who long for a breath of fresh air and a more healthy appetite! How would Malaga suit you?

The argument is often used in favor of warm climates that consumption is not a native of the south,—it belongs rather to the cold north. This is true (at least in North America). Why, then, it is asked, is it not a good plan to send consumptives to a climate which does not generate the disease? If the natives do not suffer from the disease, it is surely reasonable to suppose that such a climate must be of value to those who are affected.

While we admit that consumption is of rare occurrence in the Southern as compared with our Eastern

States, we hold that other diseases, none the less formidable, yet more speedy in their life-destroying action, engraft themselves upon this "true first stage," and carry the victim off *before* consumption has had time to do its work. Fevers, and fluxes, and dropsies, and pneumonias are threefold more frequent and fatal in the South than in the North.

This unsound, unripe human fruit, predisposed to disease, in the South is cut off by active disease, while in the North it decays with the blight of consumption, if there be cold and moisture enough in the air to produce decay.

Experience teaches us that a trip to the South will hold the disease in abeyance,—perhaps arrest for the time its ravages. Nothing in the world is so soothing to a cough or an inflamed throat as an inhalation of simple moist or medicated vapor, and inhalations have been in use for three hundred years. In a warm vapor-bath all inflammatory pain soon ceases, the symptoms are all easier, and a gentle perspiration bedews the parched skin; the disease does not for the time being spread, the pulse falls, and hope rises; but too soon we learn that this was but a *temporary*, an artificial improvement.

Last year our little boy was attacked with a capillary bronchitis. Other remedies failing, we went to the drugstore at midnight and procured some gutta-percha and his mother made a nice tight-fitting jacket. As a general thing, we rarely prescribe poultices to the breast of our patients, because we cannot trust their application to nurses; but in this instance we should

do all ourself,—we would not even trust the careful mother. We applied wet flannels over a greased flannel, taking care that the room was of the right temperature, and over this the jacket was neatly pinned. More care could not be exercised in the application, and the immediate result was most favorable; but we soon found it was but a relaxing of symptoms; it soothed, but it did not cure,—nay, it made matters worse. The relaxed system, in spite of us, contracted a fresh cold, and the vitality being by the operation of the heat and moisture rather reduced, the fever raged with renewed energy.

While the climates of the South soothe and calm the irritated membranes, yet they do not invigorate and build up and overcome the load of disease. How often do we see patients who have spent the winter in the South rapidly fail in the spring, upon their return North!

It is impossible for a climate to furnish *that which it does not possess*. It is a law as well founded as the law of gravitation that southern latitudes do not furnish so long-lived, so robust, so healthy manhood as northern latitudes,—we would be understood now as speaking in the broadest sense. We would not compare a Northern and a Southern State together. We doubt not that there is as much vigor and health in Virginia as in Massachusetts; but there is not the hardy, vigorous manhood in Spain and Italy that there is in the German states, nor as much in South as in North America. In South American cities the death-rate is as high as one in twenty-five; in the northern

cities there is about one death in forty-five or fifty of the inhabitants. And there is a reason for it; we all believe it without the aid of statistics; it is not a professional theory, but a popular truth.

Granting that this be true, does it not throw some light upon the treatment of diseases of low vitality by climate? But the answer is perhaps suggested: the climate of the South is "prescribed as a medicine, for a few months only." "That it may soothe and quiet the lungs." "Are not such medicines often required?" "Do we not gain much relief by the administration of certain expectorants and sedatives?"

We answer, we are sorry to admit that such is the case. Too many young invalids are doctored by the administration and inhalation of expectorants, to the exclusion of a good tonic, building-up treatment.

Chloroform and morphine in sufficient doses will deaden the pain of the most severe surgical operation or disease,—but will it cure the disease? Not at all. But, the influence of the narcotic gone, the pain returns, accompanied with the sense of sickness and nausea of the sedative, which only adds to the original disease.

This is the effect of palliatives and nostrums in the treatment of consumption. It is not only a waste of medicine, but it is a waste and loss of valuable time, never to be regained. And the consumptive exclaims to the day of his death, "If I had only taken this in time, and not depended so much on palliatives and cough syrups!"

CHAPTER IV.

MINNESOTA—ITS PHYSICAL PECULIARITIES.

It is with no little diffidence that we take upon ourselves the task of writing of Minnesota.

The tendency of all monographs upon particular localities or climates is to magnify the virtues of the climate under consideration, to the exclusion of all others, or, which is equivalent, dwelling upon the unpleasant features and fallacies of other climates, while overlooking their virtues,—avoiding the Scylla of one extreme to fall into the Charybdis of the other. Perhaps we have fallen into the latter error already, and before we finish we may be guilty of the former exaggeration. Suffice it to say that it is our intention to present facts which are reliable and from official sources, giving our authority for them.

Theories and deductions from others, as well as opinions of our own, will of course be accepted for what they are worth. We shall carefully eschew all commendatory letters and recommendations from the many who have written of our climate, although their numbers are legion. Several of the communications are not only valuable, but truthful, and are written understandingly; yet we think our readers can judge of our climate more dispassionately without them.

We have said sufficient of the climates of the Mediterranean to convince our readers that we do not recognize in them tonic climates. Undoubtedly, if we were in Europe and were obliged to select from the different climates there, we should follow the advice of such men as Dr. Bennett, believing that we had done the best we could.

An American, we think, would feel very much cramped along the "little coast-line" at the foot of the overhanging Alps. Crowding is not an American's idea of *tonicity*. We have been accustomed to a great deal of room, and we feel that we need it; any climate must be *depressing*, or a resort anything but tonic, which is compared to the "deck of a ship."

There is no disease which calls more loudly for room than consumption; the tendency of the disease is suffocation, constriction, want of air, and the indication is to supply it, as much for the moral effect as the physical. Air, boundless and pure, is the "eau de vie" of the consumptive. The progress of the disease is characterized by an ever-increasing desire for more air, purer air, better air; it is a necessity, it is his life. Pure air is stimulating, it excites, it is *tonic*.

As we write, we feel a certain enthusiasm in dwelling on a health resort, bounded only by latitude and longitude, called by a soul-inspiring name, "the great Northwest." We write of the northwest quarter of the continent of North America, yet we limit the title of our work to Minnesota, as Minnesota is at present the only Northwestern State.

Minnesota lies between the forty-third and forty-ninth

parallels of latitude and between the eighty-ninth and ninety-seventh degrees of west longitude. It contains about eighty-four thousand square miles of territory, an area equal to all the New England States. A peculiar and we may say a novel position does our State occupy.

Within the limits of Minnesota is what is known as the "height of land of the continent," an immense triangular elevation, almost in the geographical center of the continent, from whose sides flow the three great watercourses of America. To the east the great St. Lawrence, to the north the Red River, and to the south the Mississippi. At this point we reach an elevation of seventeen hundred feet above the Gulf; this rise is almost imperceptible from the Gulf; it is not a mountain, it is simply a height of land, as its name signifies. In addition to these large rivers, some twenty or thirty smaller rivers traverse the State in different directions. The State is well drained, admirably drained as a whole. In some of the northern parts of the State, still unsettled, there exists standing and dead water of greater or less extent; but all the morasses are susceptible of artificial drainage.

At this latitude, however, standing water is comparatively harmless, so far as miasm is concerned. It is generally conceded that above forty-five degrees the seasons are not favorable for the generation of fevers. During the long winters the morasses freeze to the bottom, and it is late in the spring or summer before they become heated sufficiently to generate miasm.

The system of rivers we have mentioned is not the

only means of drainage in the State. Numerous lakes dot the State in all directions, measuring from half a mile to ten miles in diameter. We made an effort to count them, a moment since, on the map, but we found it impossible,—they number thousands. The surface of the State being rolling prairie, these lakes act as reservoirs for the water; yet the great majority of them contain *live water*, and are well stocked with fish. St. Paul is supplied with water from one of these lakes.

In addition to the lakes and watercourses of the State, the soil absorbs moisture very readily. In most parts of the State the soil is a sandy loam, with gravelly subsoil. There is comparatively but little clay in the State,—by this we mean clayey land, not an entire absence of clay.

Again, the inhabited parts of the State are not very heavily timbered; forests exist in groves and belts, rather than in large tracts, thus exposing the ground to the direct rays of the sun, which facilitates evaporation. Much of the timbered portion of the Mississippi slope (which constitutes the greater part of the settled section of the State) consists of oak openings resembling much the appearance of old apple-orchards. Timbered lands of this character present but little impediment to evaporation.

There are no mountains in the State, to contract and condense moisture from the clouds and prevent evaporation by acting as a barrier to the free course of the dry western winds. A damp, cold soil is fully as detrimental to health as a damp, cold climate.

During the past century, summer has been in England the healthiest season of the year; this is owing to the fact that on that low, foggy isle summer is the only season of the year when the soil becomes dried by the heat of the sun. A chilly, damp air and a wet, saturated soil go together. Notice in passing a swampy bottom the difference in the air,—how damp and chilly it feels.

During the war we served in all parts of the South and in all conditions of climate, but we never remember to have been stationed in a more unhealthy locality than in Kentucky. We were encamped upon clay soil, which at all times was saturated with moisture, yet the drainage, if we remember rightly, was good, but the soil seemed to remain saturated at all times. The weather was delightful, still the men suffered greatly from sickness.

We saw much during the war on which it is painful to dwell, and upon a retrospect of which we involuntarily close our eyes; but the name Lebanon Junction, with its sticky, miry clay and the damp, unhealthy feel of everything, reminds me of the cold, damp air of the dead-room and the pale, upturned faces of the dead, waiting for their unpainted wooden coffins, soon to be deposited in graves *baled out* for their reception; it reminds me of the scores of cases we carried into the hospital with typhoid fever, of the scores of bodies we carried out dead. It reminds me of my own illness and my slow, tedious recovery, which was rather an aggravation of my disease; of my cough and of my night-sweats and diarrhœa, of my despondency and

listlessness, and of my longing for rest, for a *long rest*.

Fortunately for me, my desponding letters home were shown to a professional friend by a thoughtful father, and a well-timed letter startled me to realize the fact that a damp, cold soil would speedily carry me from "the true first stage" in which I then was to the second stage,—consumption.

I have reason to know experimentally what the first stage of consumption is like. Other of my unfortunate friends learned what the other three stages were.

We need not apologize for stepping a little to one side of our subject and urging upon parents and physicians the importance of discovering in time the "first stage." They should especially be on their guard when the surroundings are damp and chilly during the convalescence of acute disease, and more particularly when, as my friend wrote me, "your mother died of consumption."

Minnesota, then, possesses peculiar advantages, which render the soil very dry: First, the lay of the land is rolling; second, it is intersected in all directions by rivers; third, the gravelly soil easily absorbs moisture by reason of its composition; fourth, there is but little timber and no mountains to prevent speedy evaporation of moisture; and, what is more potent than all, a dry wind passes over our State almost unobstructed at all times.

St. Paul and most of the other towns of the State present admirable natural advantages for drainage,—St. Paul is situated on three terraces, including the

levee as the first. It happens oftentimes that a chain of lakes drain a valley, as in the case of the beautiful Minnehaha, which is the outlet of Minnetonka.

Latterly, medical men are speaking highly of elevated regions for consumptives; they would send their patients to mountain table-lands. While undoubtedly there are advantages connected with these elevated regions, yet the disadvantages fully offset them. In Minnesota one can enjoy the benefit of mountain air with none of its disadvantages.

We quote Wheelock's Minnesota :

"Without high mountains, we have nevertheless, in the highlands of the northeast, which do not rise more than five hundred feet above the level of the State, all the phenomena of a series of lofty elevations; and this region deserves to be designated as the mountain district of Minnesota, if not from its actual height, at least from its rapid culmination of low temperature and the development of mountain flora toward the north."

Before speaking of the climate of Minnesota and its peculiarities, we would dwell a little longer upon its position geographically, with relation to climate; and when we speak of Minnesota in this respect we would refer also to the vast country northwest of Minnesota. It is not many years since the limits of civilization were included within the boundaries of Illinois and Wisconsin,—beyond was "terra incognita:" it was an uninhabited wilderness and "always would be;" "no white man would ever venture so far north, unless to trade with the Indians." Thirty years have passed

away and two populous States have sprung into active existence,—Iowa and Minnesota,—the latter comparable in many respects, says a late writer, to Pennsylvania (surely, to Pennsylvania do we owe much of our prosperity).

St. Paul is no longer considered a frontier city ; even now towns one hundred miles west of us are contesting with us the wholesale trade, and railroads are being built north and west of St. Paul just as fast as the iron can be laid ; and be it understood that these roads are not being built as *experiments* ; for the past ten years capital was very shy of these roads and they existed only *on paper*, but ten years of farming in Minnesota has demonstrated the fact (louder than the language of rain-charts, or tables of temperature, or statistical observations could speak) that railroads in Minnesota were paying investments, and that they were, moreover, immediately remunerative. At present there are in Minnesota nine railroads in existence, over which regular trains are running. We do not include the Northern Pacific or some half dozen other roads which are about commencing. These roads, up to January 1, 1870, had 749 miles of road completed and 601 miles under contract, making about 1350 miles of railroad which are practically available (not including the 250 miles, under contract, of the Northern Pacific).

We introduce this subject of railroads for the purpose of advancing an argument on the growing popularity of the Northwest as a climate for homes. We are not now speaking of this State ; we need no argu-

ment to convince the world as to the prosperity of our State,—its growing population speaks for itself.

The argument we would adduce to convince our readers of the practicability of developing the country west and north of us is an argument which never fails,—it is the westward movement of capital. Individuals will move to the ends of the earth at the bidding of skillful writers, carrying more or less money with them; but *capital* is not moved by words or assertions, it does not follow the beck of climatic theories, it does not experiment in Greenland, nor lie idle in the tropics; it follows in the wake of healthy civilization. As a general thing, actual settlers must precede the investment of capital by about ten years. They are sent to spy out the land, and when they go back for the promised investment they must “bring their sheaves with them.” Minnesota has sent her wheat to the East for a period of ten years, and in return for this loud-speaking report of our climate 25,000,000 dollars of capital are invested in our railroads, that every acre of our State may be cultivated. Surely this is a *telling argument* in favor of the adaptability of the Northwest for cultivation and habitation.

This argument with some may seem a little out of place for a work on the effect of climate on disease. We answer that the dollars oftentimes tell the invalid better tales than the guide-books or even the treatises of physicians of great reputation. *A climate that will not sustain capital will not cure disease.* At another place we will elucidate this proposition for the benefit

of those who do not understand it,—many of our readers will at once comprehend its meaning.

The fallacy of *latitudinal* lines determining climate is fast passing away; these lines are purely imaginary, while isothermal lines are demonstrable. Our map tells us that the forty-fifth parallel of north latitude passes through the Chinese Empire, across the Pacific to Oregon, through Minnesota, Canada, and Maine, in North America, where it crosses the Atlantic and passes through the south of France and Italy. But the climate of Italy and France is subtropical, Maine is temperate on the Atlantic coast, with a winter of four months; while Oregon, on the Pacific coast, is temperate but mild, with a snow-fall of only a few inches, Maine has a snow-fall of as many feet. In Oregon vegetation is about one month in advance of New York, in the same latitude.

Now, all things being equal to the north of Minnesota, Oregon, and Maine, we should expect Minnesota to be climatically a mean between Oregon and Maine, because she is equidistant from both; but if we examine the map of the continent, we find that all things are *not equal* by any means. Canada and the New England States are bounded on the north by the cold waters of Hudson's Bay and the bays of the Arctic Ocean. This section is also exposed to the chilling influences of the polar current.

The isothermal line of 40°, which bounds Canada and Maine on the north, at Minnesota deflects to the north almost vertically, and on the Pacific coast this line terminates at Behring Strait, in latitude fifty-

eight degrees; or, in other words, on the Pacific side of the continent the isothermal line of 40° or the mean annual of 40° is ten degrees higher than on the Atlantic coast, showing that civilization extends on the Pacific coast to fifty-eight degrees, while on the Atlantic coast forty-eight is the northern boundary. And this deflection to the north commences in Minnesota. This is greatly owing to the fact that the influence of the cold waters of Hudson's Bay and the Arctic Ocean only bound the eastern portion of the continent. To the west of Lake Superior there are no large bodies of water south of latitude sixty-five degrees.

The northwest winds of Minnesota are dry but cold, —the northwest winds of Canada and Maine sweep over Hudson's Bay and are cold and damp.

In New York the "northwest" means the uninhabited regions of Hudson's Bay. In Minnesota our "northwest" has a decidedly different signification; it points to the arable and fertile lands of the Pacific coast. Thus, in speaking of the "wilds of the northwest," one should remember that it makes all the difference in the world whether he stands on the eastern edge of the continent or half way across, to Minnesota. We are now prepared to understand what Blodgett writes of "the northwestern territory."

"The assertion may at first appear unwarrantable, but it is demonstrable, that an area not inferior in size to the whole United States east of the Mississippi, now almost wholly unoccupied, lies west of the ninety-eighth meridian and above the forty-third parallel,

which is perfectly adapted to the fullest occupation by cultivated nations.

“The west and north of Europe are there reproduced, with the exceptions caused by vertical configuration only; and, important as this feature is in giving us a lofty mountain boundary on the west, we may charge much of its disadvantage to that account and still have all that is here claimed,—an immense and yet unmeasured capacity for occupation and expansion.

“By reference to the illustration of the distribution of heat we see that the cold at the north of the great lakes does not represent the same latitude farther west, and that beyond them the thermal lines rise as high in latitude in most cases as in the west of Europe. Central Russia, Germany, the Baltic districts, and the British Isles are all reproduced in the general structure, though the exceptions here fall against the advantage, while there they favor it through the immediate influence of the Gulf Stream.

“The parallel in regard to the advancement of American States here may be drawn with the period of the earliest transalpine Roman expansion, when Gaul, Scandinavia, and Britain were regarded as inhospitable regions, fit only for barbarian occupation.

“The enlightened nations then occupied the latitudes near the Mediterranean, and the richer northern and western countries were unopened and unknown.

“Climate is indisputably the decisive condition, and where we find the isothermal of 60° for the summer rising on the interior American plains to the sixty-first

parallel, or fully as high as its average position in Europe, it is impossible to doubt the existence of favorable climates over vast areas now unoccupied. This favorable comparison may be traced for the winter also, and in the averages for the year.

“The exceptional cold of the mountain plateau and of the coast below the forty-third parallel masks the advantages more or less to those who approach these areas from the western part of the Central States and from the coast of California. Though the distinct mountain ranges remain high at the north, the middle of their base or of the plateau from which they rise is much less than at the forty-second parallel, the elevated tracts are of less extent and the proportion of cultivable surface is far greater.

“The buffalo winters on the upper Athabasca at least as safely as in the latitude of St. Paul, Minnesota, and the spring opens at nearly the same time along the immense line of plains from St. Paul to Mackenzie’s River.”

CHAPTER V.

MINNESOTA—ITS CLIMATE.

COMPREHENDING the geographical position of Minnesota, its altitude, and peculiarities of conformation, and its soil, it is not difficult to understand the laws governing its climate. Latitude does not fix, necessarily, the climate of a country so much as its immediate surroundings, as large bodies of water, forests, mountain elevations, etc.

It is a fact well known to us that the climate, vegetation, and temperature of a street lying east and west are influenced by the "lay of the land." An elevated portion of the street, unobstructed by higher objects, is necessarily exposed at all times to the wind, and if the soil be sandy or gravelly, it will be a dry locality; a hundred yards farther, on the same level, the soil will be damp and cold, because it is composed of clay; still farther, a valley is passed, sunny and warm on the one side, by reason of its protection from the wind and its porous soil, while on the other side a marsh exists and the air feels cold and damp; still farther a forest is encountered, in which perhaps it is raining when the high land is dry.

Thus we have half a dozen variations of climate in as many miles, yet the latitude is exactly the same.

The accident of locality and surroundings influence the climate of this street,—not its latitude.

To purchase a lot on this street understandingly, it would not be necessary to live a year on each of the different localities along the street, to decide upon the relative merits of each lot,—a simple view of the locality, or even a description of the property, would be sufficient for most men. The same *general* laws which hold true of a section of land, govern a continent.

Much surprise has often been expressed of the peculiarities of a “Minnesota climate,” its seeming incongruities and inconsistencies. In one sense there is a reason for this popular misinterpretation of our climate; it arises from ignorance and want of scientific investigation of the laws governing our climate.

It is comparatively but a short time since Minnesota has been populated by white men; and again, there are no precedents of other countries situated like our State by which to judge, and here lie the errors of judgment.

Eleven hundred miles to the east of us lies Boston. They say of Minnesota, “Forty-five degrees north latitude! Ugh! how cold! Near Hudson’s Bay and the Rocky Mountains,—too cold!” Eleven hundred miles to the south of us lies the Gulf. They simply cast a look to the northwest and think of Esquimaux and reindeer. While on the Pacific coast we doubt if they ever think of Minnesota, so well pleased are they with their own delightful climate, even if their foundation walls are a little *shaky*.

Now, if we describe a circle whose diameter rests on the terminus of the St. Paul and Pacific Railroad, which is the western boundary of Minnesota, latitude forty-seven degrees, longitude ninety-seven degrees, its circumference enters the waters of the Pacific Ocean on the west, New York Harbor on the east, Fox Channel on the north, and Mobile Bay on the south.

Thus do we answer the objections raised against us by Boston. (And, by the way, we would say to our Boston friends that while they claim to be the "hub of the universe," the *hub of the continent* literally lies within the boundaries of Minnesota.) We are truly as far north as you, and we are about the same distance from Hudson's Bay, but we are twelve hundred miles farther from the cold winds of the Atlantic than you, and twelve hundred miles nearer the warm winds of the Pacific than you; we are nearer the Gulf of Mexico than you, and, moreover, there is no obstacle between us and the winds of the Gulf; on the contrary, the Valley of the Mississippi is a natural channel for the passage of these warm winds. Between Boston and the Gulf the Alleghanies stand.

Now, while there are no precedents by which to judge of this Northwest territory, yet we think natural deductions can easily be drawn from our locality which would establish for us a climate peculiar to itself, without the aid of precedents.

The one great objection raised against the climate of Minnesota is long winters, and not only long, but very cold. The winter in our State commences (according to Blodgett's *Climatology*) on the 24th of

October and lasts until March 20, one hundred and forty-eight days. This period corresponds with the dormant condition of vegetation. It must not be construed as meaning the reign of ice and snow, for we seldom have sleighing until after December 1. Our Indian summer occurs in November, the most delightful season of the year.

The river closes at St. Paul about the first of December. While speaking of the climate of Minnesota, we shall refer to the latitude of Fort Snelling, which is but five miles from St. Paul. The climate observations of that post extend through a period of thirty years. When observations refer to other parts of the State we shall note them. Fort Snelling is but a few minutes north of Burlington, Vt., yet the winters of that city are nine days longer than the winters at Fort Snelling. This is owing to the mountainous surroundings of Vermont. So far as mere winter temperature is concerned, our State is about the same as States east of us on the same parallel. For thirty-five years our winter temperature has been 16.1° above zero. The New England States vary but a few minutes from this; but herein lies the difference between a New England winter and a Minnesota winter,—the distance of our State from the coast gives us a dry winter. Minnesota has a winter rain-fall of two inches (including melted snow) of moisture. All of the northern coast States have a winter fall of ten inches of moisture.

It will be observed in the Appendix that we had rain during every winter month but January last win-

ter. This is unusual. From 1836 to 1855, nineteen years, rain fell at Fort Snelling on but five Decembers, six Januaries, three Februaries, and ten Marches; while in Maine, for the period of thirteen years, during which time observations were made, scarcely a winter month escaped without rain. Where there is but little rain in the winter there is but little snow. The average snow-fall in Minnesota during the winter is somewhere in the neighborhood of thirty inches, while in the New England States one hundred inches of snow is not unusual.

It is a fact well known to all that dry cold, like dry heat, is not only endurable, but not unpleasant. If there be any doubt on this subject, it can easily be set at rest by a very simple experiment. Immerse the hand in water on a cold day in October, then expose it to the wind and note the result. The rapid evaporation of the moisture occasions intense cold, almost unbearable; and yet the other hand, though unprotected but dry, would be comfortable. A hot day in summer is not oppressive, if it be dry; but the heat which often follows a summer rain in a damp climate is exceedingly oppressive.

Thaws, except at mid-day, in Minnesota are comparatively rare in the winter months. Changes in the weather are of common occurrence, but, as a general thing, the changes are from cold to colder,—*i.e.* below the freezing-point. During the winter of 1867–68, there were but two mornings when water, if it were exposed out of doors, would not freeze at 6 A.M.; in the winter of 1868–69, there were three mornings when water

would not congeal. Thaws and sunshine in the middle of the day are common, but at night the mercury falls below the freezing-point; this insures for us uniformly good sleighing all winter. Much has been said about the mercury freezing in Minnesota (which occurs at 40° below zero). Now, we venture the assertion that this phenomenon has not happened three times in the history of the State, and we doubt if it ever occurred here. Three winters ago the mercury fell below zero at 6 A.M. twenty-six times, the next winter but sixteen times, and last winter but nine mornings was it as low. Our winters bear a direct relation to the winters elsewhere; when it is cold in Minnesota, it is cold elsewhere, and when the weather is mild here, elsewhere it rains.

Some eight years since, we spent a winter in St. Louis, Mo., and we experienced the coldest winter we ever saw. The mercury was some days 20° below zero and the wind blew fearfully, which it rarely does in Minnesota when extremely cold.

To constitute a *change of weather* in winter the mercury should rise from below the freezing-point at night to above the same, or vice versa. Very frequently the mercury falls very rapidly in winter in Minnesota, and rises equally so, but the variations are invariably below the freezing-point. We refer, of course, to the night-time, as there are but few days in winter when the mercury does not rise at mid-day above 32° .

In Minnesota the mean force of the wind in winter is 1.87, while in the New England States it is 2.87. Of the different winds we would say that they reach

our State (except the northeast wind) so modified by the immense tracts of dry land traversed that their peculiarities on the coast are lost here. The west wind comes to us entirely robbed of its moisture by the high peaks of the Rocky Mountains,—it is a dry wind. The east wind, so terrible on the coast, brings us moisture, but of course not to the extent which is true of the neighborhood of the coast. It traverses twelve hundred miles of dry land before it reaches us; and here we will finish a subject we know but little about.

It seems to be a common opinion among the weather-wise of our State that here all weather signs fail. The four winds seem to center at this point, each traversing about the same extent of dry land; the peculiarities which characterize them on the coast are materially modified by the time they reach this region. Eventually the winds, with their laws and influences, will be as thoroughly understood here as elsewhere.

The northwestern climates have very short springs,—it is especially so in Minnesota. As a general thing, we expect sleighing up to March 20; last year some of our coldest weather was in March. This year we had a delightful spring; we would call it a typical Minnesota spring. Not by any means that all of our springs are so pleasant, because this year the weather has been nearly perfect. What is true of this year is measurably true of all years. This season, up to March 15, we had good sleighing; March 10, the mercury was 10° below zero; March 20, the snow was all gone; thus for eight days bad weather, and since then almost perpetual sunshine. From March 25 to

April 20, but two or three days of rain and but one snow-storm. April 3, farmers were plowing and sowing wheat. The 1st of April, the buds commenced to swell, and on the 10th, the lilac-bushes were partly in leaf, and during these days it had been unpleasantly warm. April 3, the river was clear of ice at St. Paul; April 10, a thunder-storm,—cold weather for two days; since then the weather has been very warm. Sunday, May 10, the trees were in leaf sufficient to furnish much-needed shade. May 4, the vegetation of St. Paul was much in advance of Chicago. It will be observed, by referring to Blodgett's Climatology, that spring commences at St. Paul March 21, at Boston March 20, while in Toronto spring opens April 1. But the distinction we make between our springs and those above referred to is this: stern, cold winter lasts in our State generally up to March 20, while in the Eastern States wet and *slush* exist in the mean time. The snow in Minnesota, which is generally light, soon disappears, and the ground dries rapidly, owing to the lay of the land, as before described. Our spring months usually are dry; the average fall of rain during the spring months is only six inches; on the Atlantic coast the spring rains amount to ten inches. The mean spring temperature in Minnesota is the same as that of States two and a half degrees south of us.

The summers of Minnesota are very warm,—exceedingly warm in the daytime; but usually the nights are cool. My friend, Dr. Sweeny, of Redwing, Chairman of Endemics and Epidemics of the Minnesota State Medical Society, says he has observed during the past

seventeen years that the average number of *sultry nights* in Minnesota was about six. We have the same amount of rain that falls in New York,—twelve inches; and a summer temperature of 70° , equal to Central New York, several degrees south of us.

We can observe no appreciable difference between the summers of Minnesota and those of the Eastern States in the latitude of New York, with the exception of extreme heat at mid-day. We have two inches more rain than falls on the coast during the summer. We have but little, if any, fog in the summer; but we have terrific thunder-storms, now and then, which show a peculiar electric condition of the atmosphere, resembling tropical climates. It seems as if we never heard such thunder as is heard in this State.

The autumns of Minnesota are characterized by a dryness peculiar to our other seasons. We have a rain-fall of six inches, as compared with ten inches on the Atlantic coast. We have been justly celebrated for beautiful weather in autumn; but, as we have no statistics at our disposal to prove the same, we will dwell no further upon it.

Now, to sum up the characteristics of our climate: First, the climate of Minnesota is dry,—it is dry of necessity; we are so far from large bodies of water that we are but slightly subjected to their influences. For the past thirty years our annual rain-fall has been but twenty-five inches, including snow; we have also but little foggy or misty weather. On the Atlantic coast the rain-fall, as large as it is, is of little moment compared with the fogs and heavy dews. This is

best illustrated in Great Britain; the yearly rain-fall in England is the same as in Minnesota, but the island is almost constantly enveloped in mist and fog. We subjoin the rain-fall of parallel forty-five and the Gulf States during the four seasons of the year:

	ATLANTIC COAST.	PACIFIC COAST.	GULF STATES.	MINNESOTA.
Spring	12 inches.	8 inches.	12 inches.	6 inches.
Summer	3 "	10 "	20 "	12 "
Winter	10 "	10 "	9 "	6 "
Autumn	20 "	10 "	14 "	2 "
Total	45 "	38 "	55 "	26 "

It should again be borne in mind that the observations made in Minnesota are made at Fort S. On our western boundary the rain-fall is less, while at Lake Superior it is more.

The annual mean temperature of Minnesota is 45° , equal to that of Scotland. The *annual* mean of a climate is of comparatively little importance in determining its characteristics or in giving an idea of its different seasons.

Many ardent admirers of our climate, who seemingly are grateful to Minnesota for the restoration of their health, speak of this State as a sort of Paradise, as a climate not subject to changes, with no winds,—where it is almost impossible for one to die, etc. On the other hand, many poor invalids, melancholy and desponding, worn out with their sufferings, and almost weary of life, remove the silvery lining from our clouds,

and in their stead bring into prominent relief the dark and lowering clouds of a Minnesota storm, which now and then breaks upon us with a most fearful fury, or a day in midwinter with the mercury below the zero mark, or they dwell with dolefulness upon the sudden changes in temperature, which are not infrequent.

If we were called upon to testify as to which of these pictures was correct, as a truthful witness, we should say both. It does seem to us sometimes as if the "North Star State" was the playground of the elements. We often have sudden changes of temperature, yet they are powerless for evil if the atmosphere contain no moisture; but, on the other hand, how disastrously does a sudden change affect the dwellers upon the coast!

We have many windy days during the year,—winds in the winter sometimes which cut like a knife; but they are pleasant, compared with a cold "northeaster" in the spring or fall. These winds seem to chill one through and through.

It seems rather paradoxical to note in 1860 but two deaths from freezing and none from exposure; while in Georgia for the same year seven were frozen to death and thirteen died from exposure; Mississippi for the same year lost ten by freezing and fourteen from exposure! We often think that we never knew what cold weather was until we experienced it in Mobile Bay and Kentucky.

In conclusion of this chapter we would say that whoever expects to find a Paradise in Minnesota, so far as climate is concerned, will be woefully disappointed. We

could select three months of the year, as is done in the Southern resorts, during which time we could almost guarantee fine weather; but we do not present our climate to the invalid for a period of three months, —*we recommend it for twelve months every year.* On the other hand, if one come to Minnesota prepared to meet a cold, inhospitable climate, unpleasant and trying, such a one will be agreeably disappointed.

CHAPTER VI.

MINNESOTA—THE THERAPEUTICAL EFFECT OF ITS
CLIMATE.

THE question is often asked, what is the therapeutical effect of the climate of Minnesota? Or, to express the question in a popular way, what is the climate good for? or what diseases will it cure?

The question is asked just as the housewife, in cleaning her medicine-closet, seeks information upon the different uses she can make of her old stock of medicines; and she relabels them according to the different uses of them, as they have been handed down by family tradition, "for a bad cough," "for croup," "for measles," "for diarrhœa," "for physicking," etc. Climates are oftentimes thus labeled, and hence the inquiry, "What is Minnesota good for?"

We answer, in general terms, that Minnesota is good for pretty much such diseases as cold water, pure and clear, is good for; or, in other words, that Minnesota is not a remedial climate at all, in the strict sense of the term, any more than pure water is remedial. There are no medicated springs in Minnesota, nor is there any part of our State, so far as we know, characterized by a medicated air. It is claimed by some that our air is impregnated with a peculiar gas called ozone.

We do not know that this is the case. Also that our air is peculiarly electrical; we doubt not, to a certain extent, this is true, as is true of all dry climates. But we doubt that this electrical condition of our atmosphere exerts any healing influence on the animal economy.

If we were called upon to classify our climate, as a whole, we should call it strictly a tonic climate,—tonic in the broad, full sense of the term, tonic as all northern latitudes are tonic, tonic as Scotland is tonic, which is called “one of the healthiest climates in the world.” The tonicity of her climate is stamped with a physical impress which shows itself upon all of her people; it is a tonicity which has made the Scotch race big and brawny, broad-shouldered and big-boned; it is a healthfulness which has made them long-lived. The average duration of Scotchmen’s life is longer than that of other European nationalities. Their climate has given tone to their morals, health to their religion; theirs was a religion that was nurtured and reared in the open air, it was a religion that took a strong hold upon *healthy* hearts, not hearts enlarged with enthusiasm or pulsating with excitement, but hearts which beat with the healthy rhythm of a settled purpose; theirs is a pulse which beats slow, but full. Yet Scotland is not a medicinal climate, it is a healthy, tonic climate.

The climate of New England is a tonic climate, and partakes largely of the characteristics of Scotland. The New Englanders are, as a general thing, a large-boned race; they have fine physiques, and are a healthy people; their climate is, strictly speaking, in the full

sense of the word, a tonic climate. But yet Scotland and New England are tonic for a certain class of diseases. While the climate possesses many advantages, still, like all climates, it also has marked disadvantages, and disadvantages insurmountable for the very disease under consideration,—consumption.

On the other hand, let us consider the advantages of southern latitudes as tonic climates. What we understand as temperate climates,—climates generally with a snow-fall in winter, such as the Northern States and the countries of Northern Europe,—have an annual mean of from 40° to 45° or 50° . From 50° to 60° , such as some of the Southern States, the climate is tonic during certain seasons of the year, but below 60° , which includes the Gulf States of North America and Mediterranean coast in Europe, we are loath to call tonic climates. Now what we understand by tonic is tending toward health, conducive to health. In speaking of the different remedies, we say of an expectorant, as a cough-syrup, it is for the sole purpose of promoting expectoration, easy, free expectoration; yet most expectorants have a depressing influence,—it is their mode of action; they relax the mucous membranes; after they have performed their office, then tonics are indicated, to build up. So with sedatives,—their tendency is not toward health, their province is to soothe pain and give relief. Narcotics are to promote sleep, cathartics to empty the bowels. All of these remedies indirectly may tend to health by removing the cause of disease, and then nature, relieved of its burden of disease, quickly rallies. But

supposing nature does not respond when the disease is cured, what then? Then we prescribe stimulants and tonics. We use stimulants as a sort of temporary tonic, a bridge thrown over the chasms which disease has made, until time is given for the action of tonics to repair and fill up these physical deficiencies to the full measure of health.

A tonic does not of itself impair perfect health, although we may administer it continually; it is useless, perhaps, but not particularly hurtful. Not so with stimulants, narcotics, sedatives, cathartics, astringents, etc.; a continuance of these remedies tends to impair health,—*they are worse than useless.*

Now, tonic climates, as we have observed, not only make men healthy, but they promote health, they insure it; hence we deny that the climates of the South are tonic climates. In opposition to Scotland and the New England States, let us look at Spain and the Southern States or Gulf States. "In warm climates generations succeed each other more rapidly than in temperate ones. The inhabitants marry early, reproduce their race early, inherit property and arrive at positions of trust early, and die early to make room for the next generation." It is needless to enter into a long discussion upon this point; our own experience has taught it to us, especially those of us who have relatives in the South. If we cast our eyes back, and look at the family deaths for the past ten years, we find that two have died in the South to one in the North.

Ten degrees of latitude in the United States have made a difference in three hundred years of at least

one or two sizes in our feet, in favor of the South,—if small feet are an advantage. Shoe manufacturers of the North say that the small sizes of shoes are sent South. So with the physiques of the French, Italians, and Spanish, as compared with the hardy Northmen. If ten degrees of latitude make so much difference in a race of men, in favor of one to the detriment of the other, might we not reasonably expect that this same rule would hold good with respect to invalid individuals? Might we not with reason expect that a climate which makes good, strong men would be able to repair those who are diseased?

We say of certain vaunted resorts of the South, they do not send out good, long-lived people, of robust constitutions, in the first place; but yet some of these watering-places seem to have a wonderful knack of *tinkering* up bad lungs, *providing all things happen* to be favorable,—that is, they help lungs just as a cough-syrup does,—temporarily; and there is a certain class of doctors who treat consumption by cough-syrups alone, or rather mistreat it. This class of physicians do not seem to understand that some persons die of consumption without coughing at all, from first to last; and herein lies the trouble,—thousands of the profession of the present day cannot dispossess themselves of the idea that consumption *means a local disease* of the lungs, and the patient is better or worse just as the cough is better or worse; therefore, a climate that will *stop* a cough will cure consumption. But the enlightened profession of the present day recognize a lowered vitality, which makes the cough,

and their treatment is to increase and raise the vitality and let the cough die of itself.

A steamboatman was presented to us yesterday as we went through the wards of the hospital. He came up the river a few days before with a bad cough and *terrible night-sweats*. We should have said we *again* saw him yesterday, as we saw him four days since, when we told him to discontinue all medicine. Yesterday his cough was very bad, but his night-sweats had ceased without medication. Here was a long step in advance. What cared we for his cough if the night-sweats had stopped? If we had prescribed a cough-syrup, it might have helped the cough but set him to vomiting and sweating again. We gave him a tonic.

In a few days we doubt not that the tonic may irritate slightly,—perhaps for a few days discontinue it; it may excite some little fever. So with the climate of Minnesota; there are days and perhaps weeks when the winds may be a little irritating, or it may be cold for a few days, or something else might happen. We say these things might happen, but we candidly state that we do not remember to have seen but few on whom the air of Minnesota was too irritating. And we ask why should the air be irritating? It is nothing but pure air. What is there in the air calculated to irritate? It contains simply the elements of air. The elevation of our State is not so great that the air is rarefied to any great extent. It is an air which is comparatively free from miasm, because we are so far north; it is free from fine particles of salt, because we

are so far from the coast; it is free from moisture, for we are so far inland. We are not in the neighborhood of volcanoes, nor are we subjected to earthquakes, so our air is not sulphurous. Our air is not medicated, it is not rarefied, nor, so far as we know, particularly electrified, or ozonized, or saturated, or modified in any particular; and hence we say it is good for any disease that cold water is good for, and we know of no malady in the world which cannot bear cold water, if it be pure.

We doubt not that to the influence of the *peculiar air of Minnesota* many patients ascribe their peculiar feelings, like a poor fellow who had suffered everything with his stomach, on whom we were in attendance. One night we were routed up at a very untimely hour and were bidden to repair at once to the bedside of A——, who, we were assured, was dying. Upon reaching the house we found every one in a great state of excitement: the patient frightened, the wife in tears, and the servants completely demoralized. We seated ourself by the bedside of the patient and asked what was the matter, as the pulse gave no token of death. "I'm dying! Oh, doctor, I feel so queer! Oh!" "Where?" said we. "In my stomach. Oh, it's dead! No feeling in it, oh! See, I can thump it and not feel it. I'm dying. Oh, doctor!" And he punched his stomach first on one side and then on the other, continually persisting that his stomach was dead. He felt much relieved after we assured him that for the first time in months his stomach was in a normal condition. His stomach, like all other good stomachs, was without

sensation. Thus many who come to Minnesota find themselves feeling very queer, on account, as they allege, of the climate, simply because they have lived in an impure or saturated atmosphere all their lives.

The question is often asked, does not that dry, stimulating air of yours induce bronchitis? * We answer, many think it does, and many of the residents of Minnesota think it does. And we tried to solve the problem in our mind, why does our pure air cause bronchitis? At last it occurred to us to consult the census returns and see really whether we do suffer from the disease or not. We found that the census returns of 1860 showed in the district embracing Minnesota but eighteen deaths by this disease to the thousand deaths, while in the Gulf States the mortality reached its maximum, sixty-five deaths to the thousand. Our district, we think, was the minimum. And we ask why should we have bronchitis in Minnesota? It is well known that cold, damp weather causes colds and

* Many of the profession of Minnesota think that our climate is unfavorable for bronchitis and catarrh—we can hardly agree with them. Contrary to my custom, in this connection I would cite the only two instances in my knowledge of the question being fairly tested. A. B., aged ten years, came to Minnesota, in midwinter, from Alabama, suffering with acute bronchitis. Two weeks' after her arrival, the bronchitis disappeared.

Dr. B. C., of Massachusetts, carried his wife to Florida some years since for the cure of chronic bronchitis. She returned home in the spring but little benefited. Next winter he brought her to St. Paul. She spent the winter here and was much in the open air, and returned home in the spring, having gained in weight ten pounds, with cough improved.

coughs and that damp weather continues them. It is impossible to throw off a cold during a damp spell, and it is nearly impossible to contract one while the weather is dry; it matters little whether the weather be cold or hot. Some years since we had a thaw in mid-winter; the weather was very warm for a few days; the consequence was that thereafter there was an unusual amount of colds and coughs. But, you answer, granted that colds are not caused by extreme cold weather, does not this weather irritate already existing colds? does not the cold weather irritate the air-passages and excite coughing? We answer, possibly, yet we are by no means willing to admit the proposition.

In northern latitudes water, as a general thing, congeals in the bedrooms in a great majority of instances. Now, we put the question to the coughing invalid, do you cough more on the nights that water congeals in your room in winter (providing, of course, you sleep warmly and are well covered) than during the nights that it is raining, snowing, or thawing? That is, does the excessive cold irritate the lungs as much as simple dampness? But, for the purpose of more speedily reaching our point, we grant that it does. Do you not eat more, sleep better, feel stronger, and breathe better in clear, cold, dry weather,—providing, of course, you are well wrapped? It is well known that cold is the most powerful of tonics, and in undue quantity it acts as a stimulant and sedative.

We quote from Williams's Principles of Medicine:

“Not only healthy and robust persons, but some

who are asthmatic and otherwise weak in respiratory power, acquire increased strength and energy in clear, cold weather; and even those who, from weakness of circulation, cannot resist continued cold, and usually require a mild atmosphere around them, are generally refreshed and benefited by breathing cold air for short periods, while exercise and warm clothing protect them against its sedative and chilling effects."

We would again speak of the error that many fall into of attaching too much importance to the mere symptom of cough in consumption. It should be remembered that the cough may not only exist but grow worse while the patient is improving in strength and health. Nay, in many instances we would not stop the cough; it is nature's only means of relieving the lungs; but we always look with concern and suspicion upon a cough.*

The question is often asked, does not that dry, stimulating air induce hemorrhage of the lungs? The same facts hold true of hemorrhages that are true of bronchitis or catarrhs. Bleeding at the lungs is generally the result of more or less pulmonary congestion and

* Three months have passed since we penned the lines respecting the steamboatman; since then he has gained strength, flesh, appetite, color, and we may say health; is out of doors all the time, and soon bids fair to be in perfect health. Yet he has a terrible cough; it is gradually getting better, but slowly. We feel confident that a trip to Florida would almost entirely cure the cough, yet the enervating climate would *lower* him to the grave. At the present time his cough does not occasion me a tithe of the anxiety that a return of his irritable stomach and night-sweats would,—*he is recovering rationally.*

weakness of the capillaries, which, in turn, is the result of a sudden cold, contracted by dampness. Hemorrhages have been erroneously attributed to an increased circulation, an excited circulation, when in fact they are the result of the opposite condition of things. It is not the rapid forcing of water through a strong hose-pipe that bursts the hose, but it is the stopping up of the pipe. A full, rapid stream would force many obstacles through a pipe that a full, sluggish stream would allow to obstruct the channel. If the sides of the hose be weakened by accident or age, and an obstruction closes the caliber, of course the tension is brought to bear upon the sides and the pipe gives way. This is true of the circulation,—the capillaries become stopped up by a weakened circulation; the circulation weak, the coats of the vessels are weak, and rupture follows. Now, dry, cold air is not only a stimulant to force the blood with more rapidity through the lungs, but it also provides at the same time against the contingency of bursting blood-vessels by its tonic, contracting powers. If cold air applied to the limbs forces the blood out of the capillaries of the skin into the lungs, so in the same way does it force the blood out of the lung capillaries by exerting a contracting influence upon them.

The rarefied air of high elevations causes hemorrhages by disarranging the mechanical pressure of the air. The quick respiration of rarefied air must not be confused with the tonic, stimulating, rapid respiration of dry, cold air. As a matter of fact, we think hemorrhages are no more frequent in St. Paul than elsewhere.

Is your climate good for asthma? is frequently asked. We answer that, so far as we know, there are no laws governing asthma,—no climatic laws; a climate that will cure one case of asthma will aggravate another case.

Dr. Hyde Salter, the eminent English physician and writer on asthma, says, while speaking of the climatic treatment of asthma: "What rules, then, can we lay down for the guidance of those who are suffering in their present abodes from this dreadful malady, and have not yet found out where they can breathe in peace? Can we lay down any? None, I believe, with any certainty. It is impossible to predict what will be the effect of any given air; the cure is often an inexplicable surprise."

Minnesota, like all other climates, cures a great many persons of asthma who seek the climate for that terrible disease. We have known a number of instances where cures have been effected; again, we have known cases which were not benefited at all by a trip to Minnesota.

There remains one more disease to speak of in relation to the climate of Minnesota,—we refer to intermittent fever, or fever and ague. This disease is very rare in and above the latitude of St. Paul.

The reasons, we think, are obvious why we have little or no fever and ague in Minnesota. First, the greater part of the State is too far north; we do not have a sufficient period of heat to cause miasmatic fermentations. We would not be understood to mean

that our summers are not warm enough; but our winters are so long and cold that the marshes freeze to the bottom and are not thoroughly thawed out and heated till summer; and then our cool nights keep them comparatively cool. This is also true of the New England States.

Second, the air of Minnesota is too dry for the active dissemination of the miasmatic germ for any length of time. It is well known that intermittent fever is the most prevalent where there is the most moisture, all other things being equal. In the United States chills and fevers are of rare occurrence above latitude forty-five degrees.

Dr. J. I. Head, of the regular army, writes to the Surgeon-General from Fort Ripley, Minnesota: "No instance of intermittent fever has been known to have its origin in the territory, and although the fort is surrounded by influences which appear in more southern latitudes to favor the development of malaria, no disease can be traced to a local cause."

While our State is in a great measure exempt from fever and ague, we have a climate well adapted to its cure. Judicious treatment in Minnesota rarely fails of working a speedy and complete cure, and in most instances, if time sufficient be allowed, the climate alone will cure the disease.

We can with confidence say that we speak knowingly upon this matter; for the past five years our duties have led us to prescribe every summer for numbers of "marine patients," men who follow the lower river for a livelihood. We cannot now recall in these

years a single uncomplicated case of intermittent fever which has not readily yielded to treatment.

We would not be understood to assert an entire absence of malaria in the State; this would be untrue; but we do say that we are almost entirely exempt from "chills and fever."

CHAPTER VII.

MINNESOTA—NATURAL HEALTHFULNESS OF.

WE have before referred to the general healthfulness of Minnesota; we would now speak of it statistically and comparatively. Many are of the opinion that sickness, with its causes and prevention, are beyond the *ken* of man; that the causes of disease are shrouded in mystery, and are beyond our comprehension. So far as epidemics are concerned, this to a great extent is true. The "pestilence stalketh in darkness." Not so with the endemics of a country; "sickness wasteth at noonday."

For most diseases there are well-known causes. Yet we may not clearly understand how these causes operate, or how disease germinates.

The climate of a given section of country determines in the great majority of cases the disease peculiar to that section. There is a class of diseases peculiar to the South, such as fevers of various kinds, and fluxes, and dropsies, and liver diseases. These are the result of the climate; long-continued heat, it is thought, produces them. And again, the types of disease are more severe in the South, and the system is less able to contend with them than in the more temperate and northern climates; consequently deaths are more frequent.

In the United States mortality is greater in the summer than during the winter months, and there is a reason for it. Furthermore, during the warm months patients with chronic diseases convalesce very slowly. Thus are we able to form an estimate of the comparative healthfulness of a State or district by its climate. This rule admits of no exceptions. It may be modified, either through carelessness, or by extra-precautionary measures; but the rule holds good. *Certain* climatic conditions always produce the same general effect upon the animal economy. An intermittent is always produced by malarial poison—be it in one part of the world or in another part.

Now, we ask, is there any reason why Minnesota should not be a healthy State? Too far north for miasmatic influences, too far from the coasts for the deleterious effect of excessive moisture, too far from the alkaline waters of the West not to enjoy the blessings of pure water; the configuration of the land such as to admit of perfect drainage; the soil such as rapidly to absorb moisture; the occupations and habits of our population such as to insure health,—why should our State not be healthy and the mortality low?

We clip from Colonel Hewitt's valuable little work on Minnesota the following table of the relative mortality of the different States, which he compiled from the census returns of 1860. It should be borne in mind that these figures, so far as Minnesota is concerned, include *non-resident* deaths. By non-resident we would be understood to mean those who seek our State for their health:

	Population.	Deaths.	Per-centage.	One for every
Alabama	964,201	12,760	1·32	75
Arkansas	435,450	8,860	2·03	49
California	379,994	3,705	·97	102
Connecticut	460,147	6,138	1·33	74
Delaware	112,216	1,346	1·11	90
Florida	144,425	1,769	1·25	79
Georgia	1,057,286	12,807	1·21	82
Illinois	1,711,951	19,263	1·12	88
Iowa	674,913	7,260	1·07	93
Indiana	1,350,438	15,205	1·12	88
Kansas	107,306	1,443	1·34	74
Kentucky	1,155,684	16,467	1·44	70
Louisiana	708,002	12,329	1·74	57
Maine	628,379	7,614	1·21	82
Maryland	687,049	7,370	1·07	93
Massachusetts	1,231,063	21,304	1·73	57
Michigan	749,113	7,399	·98	101
Minnesota	172,123	1,109	·64	155
Mississippi	791,305	12,214	1·54	64
Missouri	1,182,012	17,557	1·48	67
New Hampshire	326,073	4,469	1·37	72
New Jersey	672,035	7,525	1·11	89
New York	3,880,735	46,881	1·20	82
North Carolina	992,622	12,607	1·27	78
Ohio	2,339,511	24,724	1·05	94
Oregon	52,465	251	·47	209
Pennsylvania	2,906,115	30,214	1·03	96
Rhode Island	174,620	2,479	1·41	70
South Carolina	703,708	9,745	1·38	72
Tennessee	1,109,801	15,176	1·36	73
Texas	604,215	9,369	1·55	64
Vermont	315,098	3,355	1·06	93
Virginia	1,596,318	22,474	1·40	71
Wisconsin	775,831	7,129	·92	108
District of Columbia	75,080	1,275	1·69	58
Nebraska	28,841	381	1·32	75
New Mexico	93,516	1,305	1·39	71
Utah	402,73	374	·92	107

It may be urged against this small death-rate of Minnesota that few old people at that time were resi-

dents of our State. True ; but, on the contrary, there were proportionately many more infants in our young State than was true of the older States. And again, a large number of our population came here as invalids ; besides, thousands of immigrants flocked to our State, and lived in squalor and poverty during the first few years of their stay. (We refer now more particularly to the peasantry of Northern Europe.) Surely all these facts would more than offset the fact that but few old people were to be found in our State in the days of 1860.

There are several reasons why St. Paul would be expected to have a larger mortality than cities of the same size elsewhere.

1st. We are the metropolis of the Northwest. St. Paul is the receiving and distributing point of the vast country to the west and north of us. Consequently we receive all those who are taken sick when they arrive in Minnesota, or when sent back from the interior. Again, the only hospital in the State is located in St. Paul, where sick are received from all parts of the State. Many of the railroads centering in St. Paul send their operatives here for treatment from the result of accident or disease.

2d. Immense numbers of immigrants pass through St. Paul every season, leaving their sick or dying with us. (About twenty-five deaths occurred last season from this class of persons alone.)

3d. St. Paul among her citizens counts numbers of resident invalids who have made St. Paul their home, "who can live nowhere else." We find these people

no less fruitful than others, and we should be justified in expecting from them a weak and puny offspring, which would swell the number of infant deaths.

Wishing to test the truth of these figures, and to see if Minnesota really did have a light death-rate as compared with other States, we have carefully enforced the health ordinance of St. Paul, requiring all deaths to be registered before a permit for burial was issued. This record we have kept ourself; and, so far as St. Paul is concerned, we can safely say that in the main it is correct.

During the past three years the mortality of St. Paul has been as follows :

1867, 1 death in 86 inhabitants.

1868, 1 " 82 "

1869, 1 " 76 "

This is *inclusive* of "accidents" and "old age," but *exclusive* of "still-births" and invalids who die of a disease for which they sought our climate. For the first five months of 1870 we have had but seventy deaths as compared with one hundred and twenty-four for the same months last year, and yet our city is constantly growing. The average mortality of

New York is about . . . 1 in 33

London " . . . 1 in 45

Boston " . . . 1 in 45

Providence, R. I., is about . . 1 in 50

We will not venture to quote the mortality of the foreign health resorts, as Pau, Mentone, Rome, etc., or the cities of the Southern States, so much vaunted as health resorts.

Now, we claim, all things considered, to be the healthiest city in the United States, or, in other words, to have the smallest mortality of any city in the United States of the size of St. Paul. We would be understood as not asserting this to be a *positive* fact, but yet we are so sure of it that we challenge the different cities of the United States to show so light a mortality.

It is much to be regretted that we have no absolute data by which to form an opinion as to the frequency and mortality of consumption in Minnesota,—that is, of consumption originating in the State. In lieu of absolute facts bearing upon this question, we clip from the *Northwestern Medical and Surgical Journal* a few pages of the proceedings of the Minnesota State Medical Association, held at Winona in June, 1870. In explanation we would say that the different members of the Association who had resided in the State for a time sufficient to form an opinion upon the effect of our climate on the lungs were invited to give their views to the society individually upon this subject. We regret that so few were present at the time, else we would be able to furnish a more extended report:

“WEDNESDAY, 2 o'clock P.M., June 15.

“The meeting was called to order, Dr. Willey, the President, in the chair.

“The discussion of Phthisis Pulmonalis* being next

* “PHTHISIS PULMONALIS.

“*History*—1. What proportion originated in the State without predisposition?—what number with?

“*Residence*—2. (1) Effect of, in your locality, on incipient dis-

in order, the President again called the names of the members in alphabetical order, each answering in succession to the six questions to be found on the eighth page of the circular at the end of this number.

“Dr. Blood.

“1. A very large proportion are imported cases. Not two per cent. originate in the State unless there be hereditary predisposition.

“2. Always favorable.

“3. Very rare.

“(Dr. Hewitt here asked Dr. Blood if he thought that hæmoptysis was as frequent here as in more southern countries?) Answer.—No.

“5. May or June is the best time to come to this State. Our winters here have a dry atmosphere, which may be unfavorable in cases of fever, but which act differently in cases of phthisis.

“Dr. Galloway.

“1. I think that about one per cent. may be produced here.

“5. Winter is the best season for the consumptive. Among my patients, those who go out in the cold, dry weather get better with much greater facility than they would if continually housed.

case? (2) On developed disease? Also near bodies of water, or inland?

“*Hæmoptysis*—3. Frequency of? Effect of climate on it?

“*Duration*—4. What of each variety?

“*Season*—5. The effect of and the best for residence?

“*Complications*—6. Laryngitis, dates and frequency of occurrence? Other throat affections?”

"6. I have known about twenty cases.

"Dr. Cochrane. I quite concur with Dr. G.'s observations.

"Dr. Hill.

"1. Very few cases originate here. I have never known a case.

"2. Favorable in incipient cases. Those who come here with well-developed phthisis die.

"3. Not frequent.

"Dr. Mattocks.

"1. A very few die.

"2. Have seen very favorable results.

"3. Very rare.

"5. They should come at *any* time if from the Eastern States. If from the Southern States, *June* is the best month.

"Dr. Mayo.

"1. I cannot say what proportion; very small.

"3. I look upon hæmoptysis as an almost necessary condition in its incipient stage. In *any* case I look upon the climate of Minnesota as far more favorable in this disease than would be that of the East or South.

"5. As to the season, I should recommend patients to come at *any* time; but, upon the whole, I think the winter is the most favorable. The air is then dry, but not, in my opinion, and as a general thing, *too* dry; it acts as a tonic, and the patients are enabled to exercise with pleasure, and with good effect on the general health.

"Dr. Hewitt. Suppose the disease were developed in New Orleans, and you were asked at what season

you would advise the patient to come here, what answer would you give?

“Dr. Mayo. Even in such a case I should recommend him to come in the dead of winter. Such a case would require great care and watchfulness, but if these were exercised, I should expect a more speedy recovery, if recovery were possible, here than elsewhere.

“Dr. Murphy. I came here twenty-two years ago, and I think that I may say that I am a living example and a striking one of the advantages to be derived from the climate of Minnesota in cases of pulmonary disease. At the time of my coming here I was a very ‘light weight;’ I, in fact, did not exceed 136 pounds; now my weight exceeds 226 pounds. At the time I came, decided symptoms of pulmonary disease had declared themselves in my case; but I found an immediate benefit from the climate of Minnesota, and at the present time I do not believe that (so far as my lungs are concerned, at least) there is a healthier man in the State. There is one thing that occurs to me as important in reference to this subject, and it is this: I have known persons to come here, *even in advanced stages of the disease*, and who made the most astonishingly rapid recovery. They came in despair; but, *on becoming better, they returned to their homes and their business, which they had no sooner done than the disease again developed itself, and apparently in a worse form, so that it might be said of such cases that their ‘last state was worse than their first.’* I am confident that, *if they had remained here, they might*

have lived for years; and my observations have led me to the conclusion that, unless a patient acts as I have done,—that is, unless he determines to make Minnesota his permanent abode,—he had better stay at home and die.

“Dr. Mayo. Let me ask Dr. Murphy whether he is quite satisfied that when he came here he labored under actual and unmistakable *phthisis pulmonalis*? I ask this question because there is a very general opinion among well-informed medical men that if tubercles once be formed, there can be no restoration to the normal condition of the lungs.

“Dr. Murphy. Well, all I can say in answer is that I was examined by the most skillful men, who all concurred that I was so suffering, and that was why the doctors ordered me north.

“Dr. Mayo. My idea of the disease is, that there is a *positive destruction of tissue*, of the matter composing the lungs. Now, if you lose a leg, you cannot get it back, and similarly I am of opinion that if you lose a portion of the lungs, the injury is, to that extent, irreparable, though still you may live in apparent health and strength. Is it not possible that the doctors may have been mistaken in their diagnosis of your case?

“Dr. Murphy. I can only repeat that their opinion was that tubercles had formed, and that I rapidly got well in Minnesota. That I am a sound man now is evidenced by the fact that I have never had a single day's illness since.

“Dr. Sheardown. Dr. Murphy's case is so remark-

able that I should like to ask him whether he is sure that there is no tubercular disease in his case at the present time ; whether the disease (which might have been arrested twenty years ago) may not still exist, though in so modified a degree as to occasion no observable symptoms ? or may not tubercles be healed by absorption ?

“Dr. Murphy. I think it quite likely that absorption may take place, and I think that my own case is a case in point. Reverting to the general question as to the salubrity of this as compared to other climates, the doctor said: I have known business men who came here apparently doomed, and became so healthy and strong as to present no evidence of the disease, and they went back to Memphis and other places, *but they never came back here.* They were again attacked, almost as soon as they breathed their native air once more, and without exception they died. I have known a man who came here with but one lung, and he became quite strong and healthy. As to the incipient stages of the disease, there seems to be no difference of opinion as to the salubrity of the climate of Minnesota for them.

“3. I don't think hemorrhage is a matter of such very great importance as is sometimes attributed to it; on the contrary, I think that sometimes it has a beneficial tendency, by relieving undue pressure on the lungs, and rendering respiration more easy.

“Dr. Sheardown. Twenty years ago I was very thin. I know I had tubercular disease, because I coughed very much, and on one occasion I coughed up

something which on examination proved to be a portion of the tubercular mass. I came here fifteen years ago, and now I am glad to say that *I am quite well*. (We may say here that the doctor's weight closely approximates two hundred.)

"1. I know of no case originating in this State.

"3. Of rare occurrence in my experience.

"5. I think that the fall is the best time to come here,—that is, generally speaking.

"Dr. Adams.

"1. I have never seen a single case during sixteen years' residence here, either in my own locality or in any portion of the State. I look upon the climate as most singularly and exceptionably good in this disease. I do not believe that there is any better.

"2. Its effect on incipient disease is, I should think, most beneficial. I should think that nineteen out of twenty such cases recover health. Even in developed cases, if tubercles have not begun to form, I think that four out of five will recover, and more certain and more speedily than in any other climate.

"3. I do not regard hemorrhage as an evidence of phthisis—certainly not in all cases. I know the case of a school-teacher who came here from Indiana with excessive hemorrhage. No other symptoms of phthisis. She recovered. Mr. Daniel, of Hastings, had half a dozen hemorrhages, some years ago, and now (having recently examined him for life assurance) I heartily wish that I were as sound as he.

"4. In incipient cases, I think a residence here of eighteen months or two years may restore the pa-

tient. In many extreme cases, I think that the patient had better have stayed away, believing that in some such cases the climate assists the progress of the disease.

"5. In incipient cases the month of June or September. In confirmed cases, I should not advise a patient to come here from the South, but from New England *at any time*.

"6. I think that laryngitis, as a complication, exists here less frequently than at the South. Indeed, its occurrence is very rare here.

"Dr. Stuart (Winona). I have written a letter on this subject to Dr. Cox, of Washington. This letter will be published; and as it covers all the ground coming under the several divisions under discussion, I will not occupy your time now, but will send my published letter to Dr. Stone.

"Dr. Rhodes.

"1. The cases which originate here are very few. I have known but one or two cases in thirteen years, and I am not quite sure that they did not bring the disease with them. I know of people who came from the East to our town, and in three cases the patients were in an absolutely dying condition when they came.

"2. As to the effect of our locality in this disease, I don't know that I can say much in its favor. I sometimes advise patients to leave Stillwater. When people with more money than sense come to me for advice, and I find that, having *ostensibly* come here for their health, they are taking the best possible

means to destroy the little remnant that is left, by shutting themselves up in close rooms, filled with fetid air, and, probably, stifling heat, I lose my temper. It makes me fairly indignant to see grown men act like so many big babies, and the first thing I tell them is to get out of such a pestiferous atmosphere into the country and exercise their muscles.

"3. There is one point which I had hoped to have heard *ventilated* at this meeting, and that is *ventilation*. Our long winter necessitates the combustion of a large amount of fuel, and our mode of heating by stoves is a very great source of impurity in the air that we breathe. We literally inhale death and disease with every breath we draw while breathing such an atmosphere. As to hemorrhage, it may be that the cold of our winter produces it; but I believe that in nine cases out of ten it is attributable rather to the stifling and impure atmosphere inside the overheated house, from which, by means of weather-strips and other ingenious contrivances for insuring poisonous and corrupted air, we have carefully closed every nook and cranny through which some *little* fresh air might enter, to dilute the poisons generated by the processes of life and combustion.

"4. As regards the duration of the disease, I think that death is generally *postponed* by this climate."

Our experience does not fully coincide with the gentlemen who have expressed their opinions regarding the rarity of "Minnesota consumption."

For the past four years we have carefully scanned

(so far as a knowledge of cases and inquiries would allow us) the deaths by consumption which have originated in St. Paul. Our official position has thrown us in contact with the friends of those whose deaths they reported.

We have no hesitancy in saying that the majority of these deaths have been clearly traceable to purely accidental causes: they were not the result of climate.

Our experience does not conflict with the views of our professional brethren already quoted. They were men of liberal education and enlightened views regarding the treatment of the disease; consequently cases which might with poor treatment, or none at all, terminate in consumption, these gentlemen have cured in the incipency. The majority of deaths which we have noticed have been those who have consulted no physician until too late, and thus the deaths have been reported by their spiritual advisers who visited them during their last days.

These deaths have mostly occurred among the poorer classes. We can bear testimony to the fact that the regular profession of St. Paul lose remarkably few patients from phthisis originating in Minnesota; hence they are right when they say "we see little or none."

We have noticed a fact in our practice which we think others will bear witness to; we refer to the amenability of "*home-contracted*" consumption to treatment.

We wish we could record an entire immunity from phthisis in Minnesota; but, alas! we cannot. Consumption is a universal disease: it is a blight which afflicts the whole *human* family.

CHAPTER VIII.

MINNESOTA—THE CONVENIENCES OF AS A PLACE OF
RESIDENCE FOR THE INVALID.

WE have spoken at length of the physical advantages of Minnesota for persons in delicate health; the advantages to be derived from a change; the advantages to be derived from our climate; and there is still another advantage that we possess over all the health resorts of the world,—we refer to the conveniences of life, moral, social, and physical. We have referred to these advantages incidentally before; we would now dwell upon them.

It has always seemed to us so strange that physicians would overlook the inconveniences of a health resort when they advise their patients to leave a pleasant home for a vaunted resort. Many of the miseries or pleasures of life are attributable to our immediate surroundings. We now speak of the surroundings of life, not from a hygienic point of view, but from a social and moral standpoint.

How important is it to the preservation of our health that our daily walk and life be characterized by healthy (morally speaking) associations; that our home be pleasant and attractive; that our social relations be pleasant and agreeable; that we hold in subjection our

passions and pleasures, our business ; in fact, that we hold *ourselves* in subjection to the laws of God and of health !

We have at length in previous chapters denied that consumption in the aggregate was the immediate result of the indiscretions of life ; that these indiscretions resulted in the deposition of tubercle, or, in other words, denied the oft-repeated assertion that consumption and the disobedience of the laws of morality and hygiene bore the direct relation of cause and effect.

In all countries poor husbandry and careless tilling of the soil result in enormous crops of weeds. In the South the weeds grow ranker, faster, and are more abundant than in the North. The covering of the land with weeds is the result of poor husbandry ; but the determining of the variety of the weeds rests with the soil and the climate. In Canada and New England the thistle is to the farmer what consumption is to the people,—the most dreaded enemy. Thistles are peculiarly indigenous to the soil of the North Atlantic States ; but by careful tillage they may be controlled, —without great care they overrun the land. Now, thistles, and drunkenness, and sloth bear no direct relation to each other ; but if the farmer's household be given to drunkenness and slothfulness, this dreaded weed will ruin his crops. The climate and soil produced the thistle, but carelessness paved the way for it.

So with consumption. If the home be not pleasant and the different members of the family wander off into dissipation, and the cares of business lead to

irregularity and loss of rest and appetite, or the system is reduced by grief or poverty and disappointments, and the laws of hygiene are regularly transgressed, either from carelessness or the force of circumstances, consumption is at hand to receive the victim.

Our premises, we think, are indisputable. Climate of a certain character predisposes to consumption, and the disease selects for its victims those in whom exist a lowered vitality, the result either of inherited predisposition or carelessness of living, or unfortunate and unavoidable surroundings.

Thus dissipation, grief, or poverty are equal partners with climate in the production of consumption. Should we not strive, then, when we leave the cold and moisture behind, by a change of climate to leave the other burdens behind also?

This, then, leads us to the consideration of the inconveniences of the different resorts for consumptives,—insurmountable inconveniences.

Climate of itself *alone* will not occasion consumption in a *robust, healthy* person; nor will *mere climate* alone restore a consumptive to health unless the surroundings be favorable.

It is well known that there is no disease so directly influenced by surroundings as consumption; and we do not deem it simply *well* to send our patients where they can live with convenience and pleasure while availing themselves of the advantages of climate, *but we hold most decidedly that climate is of little avail without these other advantages.*

Invalids occasionally visit a climate for the purpose

of "*roughing it*," and oftentimes they are helped thereby; with dyspeptics and hypochondriacs rough living is of benefit, but invalids with a decided predisposition to, or existing weak lungs are not the sort which "*roughing*" helps,—the risks attending this course of life are too great for most persons.

For the purpose of comparison, we are about to quote from the *Cincinnati Medical Repertory* and *Lippincott's Magazine* articles on the climate of Florida for consumptives. We select these two articles because they are ably and understandingly written and they are the latest articles which have appeared (they are to be found in the April numbers). They are written by medical men, and both admirers of the climate of Florida for consumptives. We would advise all who are interested to procure the articles and read them *in extenso*, as we shall select their worst side. We select rambling passages from the *Repertory*:

* * * "Fernandina, Florida, may then be visited; the town is built upon sand; the hotels are fair; it is a favorite resort for many.

"Farther south is Jacksonville, held in great favor as a place of resort; it is fairly a city of invalids, some thousands of whom reside there every winter. Nearly every house in the city contains a patient. The city is built upon sand, and has no pleasing features aside from the salubrity of the climate. The rain-fall is the same as at Charleston. From among so many dismal, desponding invalids an escape up the St. John's River is desirable. As the vessel parts from shore one is impressed by the almost melancholy quiet which over-

shadows, as it were, the broad, dark river. *It is here that existence may be soothed away almost unconsciously while death attacks the portals of life.* With anticipations of future happiness you may for once bravely revel in defiant thoughts of death.

“Every few miles boarding-houses and hotels are found. Twenty-five miles above is Green Cave Spring Hotel, where from fifteen to twenty-five dollars per week is charged for ordinary board. Horses for riding or driving are not to be found. Some forty miles above Jacksonville, St. Augustine can be reached; it is the oldest settled town in the United States, and is justly esteemed as a resort for consumptives.

“Consumption, however, is not a disease unknown here; indeed, it is a common affection among the natives. The continued influence of a uniform elevated temperature has a well-known languishing effect, and consumptives who are long subjected to its influence find themselves rapidly losing their lung-structure during the warm months. The climate, of course, is a moist one.

“The winter climate all around the Gulf is liable to be affected by great depressions of temperature; it will therefore appear that perfection of climate is not to be found; its roseate enjoyments must be accompanied always *with the thorn of discomfort.*

“The hotels charge from three to four dollars a day; by the week rates are less.

“The depressing influences of a place crowded with coughing, expectorating invalids, to say nothing of occupying apartments long used by them, is apparent.

“Southern Florida compares with Southern Europe.”

The writer concludes his article as follows:

“Whoever visits these southern localities now must not expect all the comforts he would desire. If he has left the trials of the actual world and seeks to bring the glow of youth to his cheeks, he must take with him for a companion that *magic imagination* which sees the beautiful always and finds cheerfulness where others insist on receiving disappointments. With this fortunate disposition he may indeed, as near as may be, lead a *perfect life* in a *perfect climate*.”

In justice to the above, we would say that we have selected plain statements, but we have not garbled them or given to them a false meaning.

We now present extracts from another physician who spent a winter in Florida :

“During the last winter I traveled extensively in Florida, and observed everything worth observing, both as invalid and physician. It is a land of many wonders. No more singular country is to be found on the broad continent than this mixture of sand and mud, called the Land of Flowers.

“When Spain offered to sell and Congress proposed to buy it, John Randolph of Roanoke bitterly opposed the purchase. Much was said in its favor, and beautiful descriptions given of its fertility and value. He replied, ‘It is worthless,—a mere mixture of sand and mud, inhabited by mosquitoes, snakes, and alligators, where a sensible wolf will not stay; a land without inhabitants and to which there will be no migration.

No one, if compelled to remain, would go there from purgatory,—no, sir, not even from hell itself!

“This is a pretty accurate description of many parts of East Florida. It is, however, a general and therefore not a perfectly correct account of this very remarkable land, . . . where everything can be found except ice, yet where the people, with a productive soil, a mild climate, and bountiful nature, affording every table luxury, live on corn grits, sweet potatoes, and molasses; where many men possessing forty thousand head of cattle never saw a glass of milk in their lives, using only the imported article when used at all, and then calling it *consecrated* milk.

“No sick man should leave the comforts of home and incur the expense and danger of a march to Florida unless there is a strong prospect of benefit to be derived from the journey. He should have the positive command of a competent physician; he should travel in company or have some one to take care of him in case of sudden sickness by the way, or before he has comfortably placed himself and made acquaintances.

“And here I must remark that a man’s wife is generally the very worst companion that he could take. Her very anxieties about him commonly render her a bad nurse if he is very ill: she is forever troubled about those left at home, and with the best intentions in the world will, out of pure affection, worry a sick man to death. . . . I have certainly seen more deaths occur among those invalids who carried their wives with them to Florida than among those who went under other companionship.

“The best plan, however, is for a set of patients to put themselves under the charge of a physician, and thus form a traveling hospital. Change of place, diet, exercise, medicine, and climate can be all properly selected and regulated.

“One thing very necessary for health all through this Southern country is to drink no water from springs or wells.

“Its atmosphere is always damp; on the coast especially the air is highly charged with moisture; and if such persons go for the benefit of the warm climate, they should keep inland and live among the pines.

“There are many feeble persons who suffer from a relaxed condition of the skin,—who are always moist and easily thrown into profuse perspiration. For these a dry air is best: it will aid in carrying off this excessive moisture. The damp air of Florida will rather aggravate this condition: let them try the dry, bracing air of Minnesota.

“Still, there are many cases in which a warm, moist air is soothing and quieting to the lungs and throat, just as the inhalation of vapor will relieve a cough and help the cure.

“In all chronic affections of the internal organs external warmth and the keeping up a moderate action of the skin are very beneficial, and the climate of Florida is here certainly of great use. It is warm and keeps up perpetual moisture. I can strongly recommend it.

“One chief object in spending a winter in Florida is this: a man with chronic disease should be satisfied

if, during the winter, he merely keeps his enemy at bay. He is content if his disease—his enemy—makes no progress then; and if his life is to be a constant retreat, a running fight with and from death, this is a strong fortress into which he may retire, and from which he may often set his enemy at defiance.”

It is needless to criticise the above articles, or to show wherein the fault of the climate lies. They speak for themselves. One fact is perhaps more prominently apparent, and that the depressing moral influence of the country,—“where one can bravely revel in defiant thoughts of death.” In the first place, one does not go away from home to *sweeten* the approach of death. We seek a change of climate for the purpose of recuperating lost energies and of gaining lost ground.

It is well when one leaves home an invalid to carry “that magic imagination which sees the beautiful always;” but imagination alone is a poor thing to rally on, no matter how vivid it may be, providing there is nothing to stimulate an appetite. We would advise all who are about leaving home for a winter in Florida to remember that. There are matters to be considered in sober earnest, without the aid of “vivid imagination,” which are of vital importance; and among the more important of these considerations is, What are to be the accommodations when we get there? This question we would advise all to consider, whether bound for Minnesota or the South,—if, peradventure, it were not better to

“bear the ills we have,
Than fly to others that we know not of.”

One great advantage that Minnesota possesses over all other watering-places or health resorts is its accessibility. There are three approaches to our State,—by steamboat up the river, by rail from Chicago (we are twenty-fours from Chicago), or by rail from Duluth. This latter route is yet new, but we think eventually it will be a favorite route both for tourists and invalids. In the West a new route does not by any means presuppose a route deficient in accommodations or conveniences; on the contrary, just the opposite of this is true. A sleeping-car accompanies the Eastern trains to and from St. Paul. Two trains arrive daily from the East, and two lines of boats. One need never fear being crowded on the cars or lacking for comfort of any kind. And again, there are seven lines of railroad centering in St. Paul, which cross the State in all directions. One can go by rail to the haunts of the “red man” or beyond the boundaries of civilization, or by steamboat up the rivers Mississippi, Minnesota, and St. Croix. It should be remembered that it is the present policy of the Western States to build railroads in advance of immigration, and thus literally fill up the country by *steam*.

Another advantage that we possess over the old health resorts is a tonic *moral influence* which pervades everything in our new State. We cannot better explain our meaning than by saying that we would be understood to mean just the opposite of “reveling in defiant thoughts of death.” In Minnesota it is *hard to die*. Even the invalid seems to become to a certain extent enthusiastic over the growth and improvement

of our new State. The active bustle of life seems to inspire one with a desire to take part and be a part of the growth and prosperity of this young State. Everything is new—everybody seems to be busy ; and there seems to be a place for every one, and a seeming want for more men, women, and children. Here we have no old ruins gray with time to brood over,—links of sentiment binding the past with the present. We are too young for sentiment,—too busy to brood over the recollections of the past. No, the Minnesotian thinks rather of the wonderful present, and his broodings consist of plans for our brilliant future.

This enthusiasm, we say, inspires the invalid with a desire to take a part with and be one of us ; and to-day hundreds of hale, hearty men are enjoying the pecuniary rewards of investments planned a few years since in the sick-room.

Have you never noticed that some mornings you awake with a headache or feeling very badly, and you hardly know whether to go to your office or not, and on the whole you make up your mind to remain in bed for the day ? The determination is hardly made when the door-bell rings, and that “important business,” which always seems to come on unfortunate days, demands your presence *at once*. You at once arise, leave your sickness at home, and, under the excitement of business, forget all your bad feelings. Now, the deciding difference between a sick and a well day in this instance is a little *stimulating excitement*. This is what we mean by the “tonic moral influence” of Minnesota in contradistinction to the depressing

influence of the South. And who will deny that this is all-potent? Many a poor man has been drawn into the vortex of consumption simply for want of something better to do. Many have carried with them to the grave the burden of consumption, simply because it was theirs by right of entailment and they had not the moral courage to refuse the dread heritage; and many consumptives have not the moral courage to at once leave for a *live* country and shake off the disease, but, on the contrary, must go the way of their "fathers," and take a sedative climate in their course. It is a fearfully tedious thing to die of consumption in the New England States. We know the whole programme from first to last. We know what the doctor says, and how he says it; what the neighbors bring in, and how they bring it. We say we know it all, for we have seen it. Mrs. Stowe, in her "*Old-Time Folks*," made a serious omission when she left out the New England sickness and death by consumption.

Now, in all seriousness, we beseech you, New England mothers and fathers, who have been the means of entailing consumption upon your offspring, not to wait until the stethoscope reveals the fact that your children's lungs are half gone before you recognize the fact that they are failing, but pack them up and send them off while yet in the ruddy glow of health, that they may have a chance for their lives.

Another advantage possessed by Minnesota is this: *accommodations for strangers*. Our State is the gateway for the Northwest,—not only for our own territories, but for the British possessions. A constant

stream of persons is continually flowing into and through Minnesota—for pleasure, for business, for homes, and for health; and it is ours to provide accommodations for these immense numbers. The consequence is that we are a State of hotels—of all kinds, sizes, prices, and languages. In St. Paul alone there are three first-class hotels and by first-class we mean from a New York standpoint. There has just been completed a new hotel in St. Paul (the Metropolitan) which will compare favorably in every respect with any hotel in the United States. Families can be accommodated with entire suites of rooms, including bath, etc., on every floor. Everything is new throughout. It is in charge of Gilbert Dutcher, late of Madison, Wisconsin. The Park Place Hotel is, as its name signifies, situated in a pleasant park on a retired street. It is to St. Paul what the La Pierre House is to Philadelphia—the resort of wealthy tourists. It is in charge of Colonel Johnson, late of the Newhall House, Milwaukee.

The Merchants' Hotel is in the center of business, convenient to the boats and depots. It is the resort of business men. The growth of this building has literally kept pace with the growth of Minnesota. Twenty-five years ago it was a log hotel; now the original logs have given way to massive cut stone, and the energetic proprietor, Colonel Shaw, for the past few years has added to the building fifty feet front for every hundred thousand of new inhabitants in the State. We take pleasure in thus briefly noticing three first-class hotels. In addition to these hotels, there are

several new ones in St. Paul which furnish excellent accommodations for a less price. We should be unwilling to classify them as second-class hotels; they are first-class of their kind.

Besides the hotels, there are numerous boarding-houses—in fact they may almost be ranked as hotels—and their object is to entertain those who do not wish to board at a hotel. They are elegantly furnished and in retired localities; consequently they are very select and their rates high.

St. Paul is by no means the only city in the State with superior hotel accommodations. Minneapolis is in no way behind St. Paul in this respect. So far as our experience extends, we can recommend the hotels throughout the State.

In addition to the hotels of towns and villages in the State, each important lake or watering-place in the State has its hotel; and some of these resorts are charming.

The rates of living in Minnesota we should say are about the same as the rates of living in the New England States.

Game and fish are abundant and very cheap.

The water of the State is excellent, and we advise all who are thirsty to stop and drink at the first spring they meet—*fearing no evil*. St. Paul and Minneapolis are supplied with water-works.

We have before referred to the steamboat and railroad lines through the State; we must not forget to mention our post-roads and horses. Our State is well supplied with elegant roads, and we are a State given to *riding*. In St. Paul we are blessed with ten livery

stables, besides endless numbers of hacks and private carriages. And that which is true of St. Paul is also true of all the other towns in the State. We differ from the other towns of the State only in size. What is true of one city or town is claimed by all; and not least among the truisms is a certain individuality which characterizes each town, rendering it superior in some respect to all others. Each town seems to be a *center* of some kind, and a *head-center*, too. These little municipal extravagances, at first laughable, are really but the outbursts of a healthy growth. They always indicate prosperity; and it is singular how soon our *non-residents* fall into this habit of blowing *town-trumpets*. It is the policy of a Minnesotian to interest every one that visits our State in our internal improvements; and to this passing interest, excited in wealthy invalids, Minnesota is indebted for her marvelous prosperity.

Ossian E. Dodge, Secretary of the St. Paul Chamber of Commerce, bids me invite all strangers in the city desiring information relating to Minnesota to either call upon or address him at the rooms of the Chamber.

In addition to Mr. Dodge's vast experience in Minnesota, he has by his industry established the largest newspaper reading-room in the United States. From personal experience we can say that Mr. Dodge is never happier than when answering questions relating to Minnesota, and none are better qualified for giving information than he.

CHAPTER IX.

ANSWERS TO QUERIES.

WE have thought best, to make the foregoing pages directly applicable, and also for the purpose of adding such suggestions as may have been omitted, to select from our letter-file letters, from different parts of the country, making inquiries respecting our climate, etc., to which number we add two or three hypothetical letters, which, we think, all would desire to see answered, though none have seen fit to *directly* make the inquiry.

1st. We copy many questions from a man in Massachusetts, which are characteristic of some of the letters Minnesota physicians receive, and are expected to answer.

“What can land be bought for, and in what part of the State?

“Do Indian corn, apples, and other *fruit* succeed well there?

“If your land is not stony or clayey, what do you have as a substitute for stone and brick in walling up wells and cellars?

“What kinds and qualities of timber do you have, and what ratio does woodland bear to prairies?

“What varieties of wild game?

“Are not the Indians still troublesome in some parts of the State?

“What is your dependence for markets?

“Are mechanics and farm-hands reliable and plenty, and at what wages?

“Can stock-raising and dairying be made profitable?

“Are not wolves troublesome to stock?

“What are your common school facilities?”

We present this letter for the purpose of answering some of the questions which may interest families coming here for their health, also to inform all seekers for like information that by addressing a letter to the Assistant Secretary of State (St. Paul), a pamphlet will be sent them, free of cost, containing all the information they may desire respecting our State. And, moreover, it will be *official information*.

We would also suggest to our readers that while the great law of the “eternal fitness of things” is not a law of nature, it is nevertheless a law which should govern us all; and especially is it applicable to those who write long letters to physicians about everything except their profession. If such parties do not receive answers to their letters, it is because the recipient of these letters recognizes the law of fitness, etc.

In reply to some of these questions, we would answer that, when we say there is but little clayey soil in the State, we do not mean to be understood that clay does not exist in the State. There is a sufficiency of clay for all purposes of manufacture, but as a *soil* it is rare.

The ratio of woodland and prairie is difficult of estimation. A general idea of the State can be deter-

mined by imagining the State to be an immense rolling prairie, with belts of timber and small groves skirting the lakes and watercourses. This does not refer to the immense pine districts in the State. The varieties of timber, we think, are not unlike the timber of the New England States.

Game is very abundant in the State, and in this particular lies one great advantage which we possess over most watering-places or health-resorts. It is an advantage, from the fact that an invalid, if not too sick, can spend much of his time out of doors in hunting and fishing. Ducks, in the spring and autumn, are to be found in all the lakes of the State. The lakes within a radius of ten miles from St. Paul furnish the city with an abundance of this game. One can go a *ducking* by steamboat, rail, canoes, buggy, horseback, or on foot. In fact, these lakes are so frequent, and so near, that one cannot go amiss of ducks during their season,—and what is a decided advantage, there are but few lakes in the State which are not surrounded by dwellings, where board can be obtained at from four to six dollars a week. Minnesota is pre-eminently a State “given to hospitality.”

It should be remembered that every individual and family who come to Minnesota *have to be boarded* for awhile, after their arrival, until they become settled. This is true of the laboring man in his shanty and the capitalist in his mansion. All of us are required to furnish the sojourner with hospitality, and, to a certain extent, our houses are all hotels.

After the first of August, prairie-chickens are very

abundant, partridges, in winter, and rabbits are very cheap. Venison is as common and cheap as mutton in its season. Fish—such as bass, pickerel, pike, perch—are very plenty. The lakes are all well stocked with fish: and boats can be hired at all the more important lakes. An invalid can take his choice of a dozen lakes; leave St. Paul in the morning by rail, troll or fish all day, and return by tea-time in the afternoon.

We have now in running order a State university, three normal schools, three or four denominational colleges, and good high schools in every town of any importance in the State. Look at these figures, ye lovers of *free* education. An ultimate school fund of \$16,000,000. Number of school-houses in 1868,—frame, 1000; brick, 37; stone, 48; log, 681: total, 1766! These houses have cost over \$1,000,000. Paid teachers, 1868, \$322,786. Have not these figures a *tonic* sound? Enough of this letter.

Mrs. B. C., of Buffalo, writes that her husband, a professional man, is troubled with dyspepsia, and is of a bilious habit, etc. Age fifty,—“Would Minnesota help him?”

We answer that men of that age, in active professional life, are pretty difficult men to deal with. If they leave home for their health, they leave under protest, and are in a hurry to go home again. Their “business suffers, and they ought to be at home.” Such men rarely leave home permanently, unless their children have preceded them and established a home.

After a man has worked himself down in a profession until he is an old man, or until he is fifty years old, we would not advise him to leave home with the view of re-establishing himself among strangers. It can be done, and sometimes with advantage, but such a one should move with as many home comforts as possible.

We should not advise elderly people to visit Minnesota for their health, unless they have been accustomed to much traveling; not but what the climate will agree with them, but a change is not in most instances advisable.

Mr. E. F. writes from Missouri: "My wife, soon after her arrival in this State from Ohio, was taken sick with bronchitis, and she is now verging on to consumption. The doctors say that 'possibly the tissue of her lung is involved.' For the past eight months she has coughed a great deal nights. What season of the year is best to come, and what town shall I go to?"

From the general tenor of the letter, we think the wife is *verging out* of consumption, instead of into it. This woman left Ohio about the time the war closed, and emigrated to Missouri "in perfect health" and perhaps a bride. They settled in some low, wet part of that State, where she contracted a cold, and, probably homesick and disheartened, she became worse and worse. (Did ever anybody fall into a desponding state in some parts of low, wet Missouri without getting worse and worse?) We do not remember what we wrote the man; we certainly did not advise him

to come here. If any country in the world would help that poor woman it would be her native State, Ohio. We think their present place of abode, "Forest City," too decidedly *sedative*.

G. H., of Mississippi, writes "through a friend" (a bad sign) as follows: "How is Minnesota for chronic affection of the liver, and dyspepsia accompanied with chronic lung complaint? For years I have been thus afflicted. Do you think a residence in your State will help me? If so, what part of the State? If about St. Paul, will you treat me? How long would I have to stay? Several in like condition would accompany me."

On the back of the letter the poor man writes as follows, with a lead-pencil: "I will state I am greatly emaciated, very feeble, scarcely able to walk; appetite poor, digestion miserable; doctors disagree as to the damage done my lung; can't stand cold, am worse in winter."

Now, this letter is of much interest, as it is a typical one. It represents a large class of persons who come or want to come to Minnesota,—only to die and be carried home.

Now and then a patient very low *apparently* is brought to Minnesota and rapidly recovers. So now and then we see a badly-shattered limb, which good surgery would immediately condemn for amputation, get well, but the recovery was at the risk of the patient's life. The world witnesses the remarkable recoveries which some make in Minnesota at the risk of

life; the profession looks with sorrow at the many deaths which were hastened by an untimely trip to Minnesota upon the advice of incompetent physicians. It will be noticed that we said, a few lines above, very low *apparently*. Now, it is a fact that many persons thought to be *very low* are in reality not very sick. He asks, "What part of the State shall I go to?" And if he comes to St. Paul, will the writer attend him? To this we answer, it is not necessary that all who come to Minnesota shall visit St. Paul or make St. Paul their home. There are a dozen towns in the State where one can be accommodated as well as at St. Paul, and there are one hundred thousand square miles in this Northwest that is just as healthful as at St. Paul. Yet if one desires to visit St. Paul, St. Paul will be glad to see him. It is a very easy matter to leave at any time for the interior of the State.

As regards the writer attending him, we would say that the thousands who annually visit Minnesota for their health should feel profoundly thankful that the writer is not the only competent physician in the State; the State is absolutely *crowded* with good physicians. As a general thing, the best physicians and surgeons of a State are to be found at the metropolis; in this State this is not the case. While the profession of the metropolis would be unwilling to admit superiors, yet, with candid pride, the profession of the smaller towns are recognized as equals in every sense of the word. In this one particular we possess an advantage over most of the new States. Many of the physicians in Minnesota have been compelled, by

reason of weak lungs, to throw up their lucrative and arduous practice in the older States for the purpose of availing themselves of our climate; and in return for recovered health they have conferred upon the State the professional services of *able* men. Hence we say to all who come to Minnesota, better wait till you arrive before you select your physician.

Besides the regular profession of the State, we have representatives of all the *cures* which were ever heard of; and, moreover, in most instances "the old original" discoverer of the cure itself is here. Baths of all kinds are to be found here, and manipulators, and patent lifts, etc. There is a large and commodious private hospital here, under the care of the Sisters of St. Joseph, where one can receive the attendance of any physician he may desire. It is fitted up with charming grounds, hot and cold baths, etc. In the neighborhood of Minneapolis there is an Invalid's Home, the precise nature of which we are not aware of. One great advantage of our *roominess* in Minnesota is that we can accommodate thousands and tens of thousands of invalids without giving the State the appearance of a sanitarium, or without the depressing effect of the contact of invalids.

"I wish to know the effect of your climate upon dyspepsia and liver disease," writes the sufferer. We again state that our State is not of special service in *any one particular disease*. It is simply a tonic climate; it is as beneficial for one disease as another, provided a *tonic* is needed.

"Several will probably accompany me, similarly

affected." We do not approve of *too* many sick traveling together; as a general thing, they are powerless to help one another, and yet one of the number will always try and be a nurse to the other to the detriment of himself. A good rule for the invalid is "Every one for himself and a kind Providence for all." The aggregation of invalids is decidedly depressing.

Of course our advice to this poor man was to remain at home. Probably our letter never reached him. He was near "at home" when he wrote.

F. J., of Vermont, writes: "I am a young man, aged twenty-six, well educated, but quite feeble; have coughed more or less for the past year. Am in reduced pecuniary circumstances. I think I could teach a country school for the purpose of defraying my expenses."

During the past three years our official position has brought us in contact with scores of young men situated like the above. It is rarely the case that they improve. As a general thing, they go from bad to worse. In such cases consumption is worthy of its name. It literally *consumes* an invalid away from home in reduced circumstances. The tonic effect of the climate is all lost, for

"What can minister to a mind diseased?"

No advantage is taken of fine weather unless to drag one's self around in search of employment, which is rarely given to an invalid, as healthy young men throng our Western States. And again, young in-

valids are loath to accept the employment which is of most benefit them. Some years since a young man visited St. Paul for his health,—a man of culture and refinement. Wishing to husband his means, and yet regain his health, he wisely and bravely bought a horse and carriage and drove it for hire on pleasant days. The carriage soon became very popular with the ladies for calling and shopping. The driver proved to his patrons conclusively that gentlemanly bearing and express driving were not at all incompatible. In fact, he wisely and prudently concluded it was better to drive the ladies around town than to have consumption. It is needless to say that *such a man* recovered his health, made money, sold his carriage, and again resumed his place in society, in higher esteem with the good people of St. Paul than ever before.

We advise no young man, who is an invalid, to come here with the expectation of finding employment. There are no public hospitals: the poor-house is the only alternative.

We lately visited a young man from Boston, who left home an invalid with but ten dollars in his pocket. His friends secured passes for him to St. Paul.

The consequence was that he was too proud to crave assistance from any one here, or else he vainly expected *the remittance from home*, which generally never comes. The result was that he died, leaving an unpaid board-bill of seventy dollars with a poor widow. Before he died he was very anxious to be sent home. And if he was able to travel, we should have compelled the railroad which brought him here free to again pass

him back (as this passing invalids to St. Paul is in violation of a city ordinance, and all roads centering here are obliged to provide for all paupers that are landed here by free passes), but he was too sick. This remark he made to us before he died,—“It does seem to me, doctor, that there are enough good Christian men of means to pay my fare home.” We told him that while he thought this to be true, he should remember that the benevolent of St. Paul are daily called upon—and have been for years—for the same office, for hundreds of others in like circumstances with himself. And that the calls are so frequent that it is impossible for them to respond to them all. In most of the towns and cities of the State we have Young Men’s Christian Associations, who make it their duty to help sick young men. They furnish pleasant and attractive reading-rooms. They strive to find employment for them, and cheap and comfortable boarding-houses. They watch with them when sick; but they are powerless to give pecuniary assistance. And so with many other societies, as well as churches. Outsiders, who never give a cent to any object of benevolence, often taunt the benevolent societies for not doing more for the invalids in want of funds. Now, we have been often brought in contact, in our official position as health officer, with most all of these societies, and we often marvel that they do as well as they do, knowing, as we do, their resources.

We again repeat, that the poor who leave home to be supported by chance of finding employment, or who depend upon uncertain remittances from fathers-

in-law, or from property to be sold, or friends who ought to help them, in nine cases out of ten fall a prey to the mortification and anxiety of poverty and dependence. Nothing will help them but money.

H. J. writes from Boston: "I have a bad cough,—age twenty-five. It does not keep me from my business, but it is getting worse,—and my mother died with consumption. Have saved a few hundred dollars. Am a printer by trade. What is the price of board, and where would you advise me to go?"

We say to this young man that we have no doubt our climate will help you. Good board can be had for four dollars a week in some small country town: do not come to St. Paul. It is no place for a young invalid; everything is cheaper in the country. If first-class board can be had for five dollars a week, and good board for four dollars a week, take the *good board* and husband your money, and never set another type as long as you live. We saw by this morning's paper that a young type-setter came here a year since with his family, went to work, and got along very well for awhile, but died yesterday. Two years since we noticed an engraver at work in a large jewelry establishment in St. Paul. We were led to inquire about him by seeing him work constantly (it was during the holidays) with his wife standing by his side. We were told that he was here for his health. He died not long afterward.

These two last instances are representations of a large number of young men who come to Minnesota

for their health, and, getting better, they return to the same occupation that was the cause of their ill health.

But what are such young men to do for the support of their families? They understand no other occupation. Must they starve? This seems an unanswerable argument that these people use to obtain the consent of their physician to again work at their trade; and the kind doctor sees no other way of untying this troublesome knot than "working at it a few hours every day and eschewing night work." We think there is a better way of dividing the knot, and that is, cut it,—and cut it quick,—by answering, "If this is your ultimatum,—if it is the only occupation left for you to gain a livelihood,—my advice as a physician is for you to starve, because I am confident that if you continue this business after what you have passed through with it will kill you;" or, to be a little more abrupt,—which some men require as a damper to their argument,—“If you want to be a printer, or an engraver, or a shoemaker, you have no business with the consumption.”

It is decidedly unpleasant and disagreeable for a man to venture out of a burning house in midwinter with nothing on but his night-shirt; but the alternative of burning is decidedly more unpleasant.

J. K. is a young man of means, and wishes to know if he had better bring his wife, and how is the society in St. Paul.

If your wife is a comfort to you and you like to have her with you, and she is hopeful and has the faculty of pleasing you, by all means bring her along; but if in your private thoughts you know and feel that she

will do you more harm than good, tell her you will come out first and see how things look, and then when you want her you will send for her. We have before referred to the conveniences of getting to Minnesota and of getting home. Three trains and two boats leave for the East daily, and we are but twenty-four hours from Chicago.

As regards the society of St. Paul, we would say that if your wife comes to St. Paul to see society she had better stay at home, for society will not be very anxious to see her. We will say, however, for Minnesota society, that we are greatly favored in having a society superior to most of the new States, because many families of wealth and high social position are obliged to live in our State on account of ill health, rather than the necessity of again commencing life. Most of our large business men and professional men in St. Paul sought our climate for health.

This we say has added much to our society. One thing we have noticed in church, and have heard the ladies comment upon, and that is this: that when a person comes to St. Paul to live, or spend several months, it is well for him to make some slight advance—more to let persons know that he desires to become acquainted with them than for the purpose of forcing an introduction upon them.

We have known families to spend a year in St. Paul, make a great show and display, and go home inveighing against the coldness and formality of St. Paul society. We have known others to come and stay a year or less, and go home charmed with the

cordial reception they met. And yet the same families may have come together and boarded at the same hotel and attended the same church while they were here.

Herein was the difference between them. The one either waited a moment after church, and after introducing themselves to the pastor, asked him to call upon them, or they sent their card, with the same request. Upon the call of the pastor, they say, frankly, "Mr. A., we are here for awhile, and would be delighted to become acquainted with some of your people." Now, from what we know of pastors in general (and we have lived a great many years in a pastor's family), there is nothing in the world that will please a minister more, or insure a cordial, warm welcome to the members of his flock, than an expressed desire to know them.

On the other hand, many come to St. Paul, and seem determined that society *shall* look them up,—shall make all the advances, while they make none.

Again, as regards churches, many will say that "if we have to go to church to make acquaintances, or to be called on, I think things have come to a pretty pass,"—and up go their hands in holy horror; and then an exclamation of disgust escapes as to these church "rings and cliques," and select companies, etc. etc. We know the formula, every word of it, as well as we know "you would scarce expect one of my age," etc.,—we have had public lecturers and writers harp on it so much. We admit all they say,—it is horrid, wicked, and shameful; but at the same time we should

advise every invalid who comes to Minnesota to get "under the wing" of a church. We have all sorts of churches here, of every grade and faith. If the churches are too cold and formal to look you up, so much the worse for the churches; then you must look them up, and say to them, through their pastor, "I am a stranger, and sick and needy, and I want your sympathy and your society," and our word for it the call will not be in vain. We have reason to know that but a very few who come here as invalids, not one-fourth of the whole number, ever make any advance toward the churches, unless it is to go the rounds of all of them, and then say how "cold and formal the churches are!"

And there is to a sensible-minded person a reason why the churches and why individuals are not more cordial. Strange as it may seem, these kind and well-intended approaches to the sick are often repulsed by the sick themselves. This should not deter the churches from doing their duty; but churches are composed of *human* beings.

We would suggest to young men coming to Minnesota, whether Christians or not, to call at once on the Young Men's Christian Associations, to visit their reading-rooms, and become identified with them. If you do not wish to read the *New York Observer*, read the *New York Herald* or *Harper's Weekly*. If you do not want to attend their prayer-meetings, attend their lectures. The young men may be *hypocrites* and *sanctimonious*, but at the same time they make good *watchers* for the sick—and good *letter-writers*.

One thing should always be borne in mind when one comes to Minnesota: you are coming among a people who, like yourselves, have once been strangers; who have been helped themselves when they first came, and who desire and expect to help others.

They will ask you "where you are from, what is your occupation, and how long you are going to stay?" In the East these questions would be impertinent; here they signify a desire to help you. They mean, "If you will tell me where you are from, and what your business is, I will try and introduce you to a man from that section," or, "I will introduce you to some one in your trade." Southern hospitality means to feed and entertain you. Western hospitality means to help you along in getting acquainted and establishing yourself. But enough of society.

We copy verbatim from C. M., in Texas:

"I was attacked with bronchitis just one year ago. I was then engaged in teaching. My disease became constantly worse in spite of remedies used. In May last I ceased teaching and came to Texas, by the advice of friends, some of whom were physicians. This climate is very damp, and I feel certain that I have grown constantly worse since I have been here, having been troubled much with chills and fever, and for three months past with dyspepsia. I am very thin and weak. Would it be perfectly safe for me to come to Minnesota this fall or winter and spend the winter and spring there, or had I better wait till next spring or summer?"

It is customary for the writers on most of the different retreats for consumptives to specify the exact time that a patient should come, and also the time he should depart. It is also convenient to account for deaths in these resorts by saying "he came too soon," or "remained too long." Now, in general terms, we should advise all who visit Minnesota to come when it best suits their convenience. This letter from Texas was written in October. October and November are our pleasantest months,—sunshiny days and cold nights. Our rain-fall in the autumn is six inches; in Galveston it is ten inches, with heavy fogs and cold northers. Hence we see no objection to the man coming in October. The difference is simply this between the two climates: in Texas, during the months of October and November, about two-thirds of the nights will be as insufferably hot and sultry as the day; in Minnesota about two-thirds of the days will be delightfully pleasant, and every night frosty. We hold, moreover, that a clear, bright, frosty morning in Minnesota, with an overcoat on, is more bracing and tonic, and just as agreeable to the lungs, as a clear, sunny morning in Texas in one's shirt-sleeves. Again, in Minnesota there are no sudden changes in the autumn (by sudden we mean hourly): in Texas they are frequent. During the past three years a relative in New Orleans has written during the fall and winter months bi-weekly letters to us—and an elegant correspondent she has been. Much surprised will she be when she reads this to find that she has been taking meteorological observations

for us during these years. Every little while we hear of a "terrible cold snap,"—perhaps sandwiched between orange-flowers and strawberries; and all winter the complaint is "how oppressive!" It is useless to say that this is true of Galveston and New Orleans and Charleston, but it is not true of Florida and the second tier of counties on the coast. It is true of every Gulf State. A weak, anæmic body cannot endure these sudden changes any more than the teeth can stand a glass of ice-water after a cup of hot tea. C. M. tells us how it agreed with him. "I am having chills and fever, and for the past three months have been troubled with dyspepsia;" and the damp climate made his bronchitis worse.

Now, suppose our correspondent should go to Florida. If it was a mild, pleasant, equable winter, we doubt not the bronchitis would be rendered easier,—but would the dyspepsia be improved by the climate? or the chills and fever? On the contrary, suppose that he came to Minnesota and the cold air made the bronchitis worse (which we consider unlikely), but cured the dyspepsia and chills and fever, how would the spring find our invalid,—*i.e.* as to his vitality? Hence we say that we can see no objection to a patient from the South coming to Minnesota whenever it is convenient, provided it is not in the early spring months. As regards an Eastern invalid coming to our State, we say it would be difficult to find a week in the year that was not an improvement on the weather of New England.

As regards this young man, we think we advised

him not to come, as we do in nine cases out of ten. And here we would state that we could count the cases with the fingers of one hand that we have *advised* to come to Minnesota without seeing them; yet in many instances we were morally certain that our climate is just what they require.

Another reason why we should not advise the young man to come is that he is "very weak and emaciated." We should advise no one to travel for his health unless he were strong enough to bear the journey well; he might improve—and *might die*.

There are a class of persons who cannot endure the cold; they are invariably worse during the cold or chilly weather; they have an abhorrence of it. To such we would say, do not come in the fall.

We copy from the *Boston Journal of Chemistry* the experience of its editor, Dr. Nichols, received since the above was written:

"We spent a large part of the month of March in traveling through some of the Southern States,—Virginia, North and South Carolina, Georgia, etc.

"We left home to recuperate exhausted energies and to avoid the chilling winds of March; but we have to declare that we suffered more from cold in South Carolina in March than we ever did in the Bay State. March was a cold, disagreeable month in all parts of the South, and the poor invalids from the North must have suffered intensely. We came home, questioning more seriously than ever the wisdom of sending consumptives away from comfortable homes at any stage of the disease. At present it is impossible

to procure proper food and home comforts at any of the so-called sanitary retreats of the Southern States.

* * * * *

“The people of the South are kind, attentive, and obliging, and do all they can to render the visits of Northern men and women agreeable. Not the slightest revengeful feeling or petulant humor did we discover in any individual, and we believe there is as good order and as much kindly feeling existing in the Southern States as in any section of the country.”

We always take pleasure in quoting Dr. Nichols and of carefully reading what he writes, because he possesses the rare faculty of always getting at the truth of a matter (no matter on what subject he writes), without upsetting, and breaking, and spilling over everything which stands between truth and himself.

Now, so far as the South is concerned, we more than indorse Dr. N. We spent four years in the South, wearing the uniform of an enemy to the South, and were always kindly treated. We were in a position to make the diseases of the South a study. For a time we had charge of St. Mary's Hospital, in Montgomery, Alabama, which, we think, ranked second with the Confederate hospitals. It was fully equipped and in good running order when the Confederate surgeons turned it over to the Federals. Our experience was this: we could cure disease and relieve pain, but our patients would die,—die from exhaustion; or, at the best, improve up to putting on their clothes, and then drag their weary frames around the hospital until they starved to death or were sent home. They could not

eat, they had no appetite, and tonics would not help them. It seemed to us that friends of ours, residents in town, died with nothing the matter with them; and it was at a time of public rejoicing, at the close of the war, when everything looked hopeful.

Experience has taught us that the South *is no place for an invalid*, no matter what the disease. It is contrary to reason, to pathology,—it is at variance even with the teachings of good sense.

Those physicians who indiscriminately send their patients to the South are like many army surgeons we have seen, always bandaging and poulticing, binding the limb up in yards of bandages, as the physician sends his patient South with yards of instructions,—“how long to stay,” “what doctor to go to,” “what to say to him,” “what to eat,” “what drinks to avoid,” “and how to dress,” “and when to leave,” “how to come home,” etc. They would poultice their patients up in the sweet-smelling orange-groves of Florida, where they can lie out of doors all day on the green-sward, inhaling the delicious odors, desiring nothing, eating nothing, doing nothing, simply consuming themselves, “taking no oil in their lamps,”—wrapped in a sweet poultice of fragrance. Maybe they die, maybe they come home in the spring relieved; they are better just as one who suffers from an acute inflammation is better after a free, copious bleeding,—better of the pain, but worse in vitality.

To such we would say, You are on enchanted ground—sleep is death. Up—put on your burden; your only means of relieving yourself of it is by gain-

ing *strength* to carry it. Seek not to lighten your load, but to gain strength to carry it.

We wish it were in our power to say to every one who would come to Minnesota, "You will get well;" but we cannot—any more than we could tell every one who was sick to apply for medical relief and they would be cured.

Some persons die from a slight cause, no matter how soon they attend to themselves, or how skillful their medical attendant.

So with consumptives. While we think the disease curable in many instances, yet it is a terrible disease,—a very serious disease. "Think not to say within yourselves," "We have healthy parents"—a "healthy past"—"healthy brothers and sisters." Consumption is a *personal* disease,—most *fearfully personal*. It has nothing to do with one's ancestors; it bears no relation to past life. It is a disease of the present and future. It should be viewed in its right light, and be called by the *right name*.

As strange as it may seem, we have seen but very *few* persons *who have died of consumption*,—*i.e.* according to their own belief. Nine-tenths of the afflicted ones who visit our State ascribe all their difficulty to the throat. "We have bronchitis. Our physicians say that our lungs are perfectly sound, and we have been examined by the best physicians of New York, Philadelphia, and Boston;" and they die strong in this belief, or at least they appear to. We do not believe this, however; we believe that these poor unfortunates *try* and believe their lungs are sound, by reiterating

the fact, not only to themselves, but to their friends, while in reality they are aware they have a mortal disease.

The census returns of 1860 report one-twenty-fifth as many deaths by bronchitis as by consumption; and one-half of these deaths by bronchitis are under five years of age. Now, we would strenuously advise physicians to tell their patients plainly that consumption is the disease (providing the physician thinks so); not say the lung is slightly involved, or that the trouble is a *deep-seated* catarrh or bronchitis. In the early part of our work we said of consumption, "Forewarned, forearmed." If a patient recognizes the fact that his disease is a *very serious one*—that it is consumption—he will take better care of himself. A man who feels at sea that a *storm* is approaching will bestir himself and prepare for it. The inexperienced mariner is overtaken and borne down by the storm because it was unexpected. Happy the mariner who can *feel* and *see* the approach of a storm without the aid of mechanics or science,—one who can feel a storm in his *very bones*,—one who can see it without the aid of a barometer. So thrice happy the physician who can *see* and *feel* the approach of consumption without a stethoscope.

It is a fact well known to the profession, if not to the people, that auscultation and percussion give no sign whatever of the approach of consumption. Tubercles may exist in small numbers without giving to the ear any sign of their existence.

For years we have been in the habit of questioning

invalids as to what physicians said of their lungs who have examined them, just to see how the learned doctors agree in their diagnosis. The result of our examination was generally this:

“Dr. A., of Smithton, said the upper lobe of my right lung was affected. Dr. B., of Smithton, said it was not so, it was the other lung. Dr. C., of Brownsville, said it was bronchitis. Dr. D., of the same town, said it was my liver. Dr. E., of Boston, examined me very carefully for an hour, and did not give me much satisfaction. Dr. F., of New York, the same.”

“Did no other doctor examine you?”

“No, unless it was an old fool who said he never could tell one note from another in music, and ‘never could seem to get the hang of the lungs;’ but he asked me if I had night-sweats and fever in the afternoon?—how was my appetite?—my bowels?—my cough?—and what had I been taking for it? He said I was killing myself with medicine for the cough, but that he would try and help my night-sweats, and give me something to increase my appetite, and advised me to take care of myself, *as I had the consumption.*”

“And what did he charge you for this?”

“He charged me but a small fee, but said I would need all my money before I got through the disease. I would not have paid him anyhow; he did not examine my lungs. I offered him ten dollars if he would carefully examine me, but he had *no machine for it.*”

Now this is the routine that many go through before they come to Minnesota. Auscultators of experience and science are chary of a decided opinion after one

examination, and they withhold it unless the case is a clear one. But we find they are not chary of good, first-class advice. The best stethoscopists of the present day lead the van—so far as a building-up treatment is concerned.

After the first or second stage, then the stethoscope in able hands is of use. It maps out the disease with marvelous exactness; it enables the physician to give an opinion as to the amount of tissue involved.

We would here throw out a suggestion to those who are continually insisting that their lungs be examined every few days. It is not within the power of medical skill to give a daily or even weekly bulletin of the exact condition of the lungs; hence it is of no service to the patient that his lungs be weekly examined. It is our experience that such patients are not the most tractable, nor do they thrive as well as others who trust themselves entirely to their physician. It is frequently the case that these patients wander around town to the different physicians for examination, and finally employ the quack (who assures them nothing is the matter but a "little irritation of the throat") and discharge their conscientious and scientific medical adviser, who really comprehends the seriousness of their case.

CHAPTER X.

CONCLUSION.

AFTER the contractor of a residence has finished the building and handed the keys to the owner, the question is naturally suggested, now, what am I to do with all these odds and ends of building material, these bits of board, remnants of mortar, nails, odd pieces of hardware, lights of glass of odd sizes, and extra hinges, etc.? They are too valuable to throw away and too worthless for sale. What shall I do with this rubbish? The carpenter, if he be a wise and practical man, suggests that a few little extra conveniences be made of them not included in the original plan, such as extra shelves, closets, and such other little matters as the *madam* may suggest.

We have finished our work on Minnesota, and yet we have left little odds and ends of thought which have not seemed to *fit in* any of the previous chapters, and still from the first it was not our intention to omit them.

The first question which naturally arises in the mind of an invalid after he reaches Minnesota is, what shall I do? Let us suggest an answer to the question: try hard and patiently to recover, and by all means

act *rationaly*. If invalids would use one-half of the reason and common sense in getting well that they do in caring for their business, we think there would be a decided falling off of deaths. But, alas! we are requiring too much, we fear.

In the first place, a boarding-house is desirable; and perhaps a word upon this subject would not be inappropriate. Almost as much depends upon making one's self comfortable at a health-resort as upon the effect of the resort. We have known weak persons come to St. Paul for their health and then take rooms up in the fifth story of a first-class hotel, for economy, while they could get a front parlor on the second story of a first-class boarding-house at the same rates. Now, this nonsense arises from a mistaken idea of *gentility*,—this is a good thing in its way, but it will not cure consumption. Again, we do not approve of hotel living for invalids; one soon tires of the diet, and from the nature of circumstances cannot receive much attention. Private boarding-houses there are in the State in great abundance; they charge from six to ten dollars a week for single persons and from forty to one hundred and twenty-five dollars a month for two persons. At a good boarding-house one feels at home if he desires to make himself agreeable; otherwise he can make himself very miserable. Our experience is that patients as a general thing receive just the attention they deserve. In St. Paul many of the better class of boarding-houses are kept by ladies,—not simply females, but *ladies*; and many of these same ladies hold a very high place in the esteem and affection of

the residents of St. Paul. Many there are who have been driven to the necessity of keeping boarders by the death of husbands; their claims upon society have only been strengthened by misfortune. From personal observation we can say that fortunate is the invalid whose lot is cast in such a home; and the general hint we would throw out is, if you chance upon such a home, for *your own good* appreciate it.

Another suggestion, to *professional* invalids who visit every place of resort in its season as its *patron*. To such we would say we *don't* care for your patronage. As a professional man, we rather dread such patients, no matter how well they may compensate us, and hotels and boarding-houses dread them. The title of our work is not a "resort for invalids," but "a home." We put forth no claim as a special resort for invalids at one season of the year, and we would not be so understood. We do claim, however, that our State is well calculated by natural advantages to build up and invigorate invalids, and to this end we invite you to *live* with us until you *recover*,—not to put up at a hotel in St. Paul and hire us to *doctor* you until the "season is over," but settle down somewhere in the State and make up your mind to *get well*; then, if you desire, you are at liberty to return home. To such we say we think our climate will benefit you, and we welcome you, and will try and make your stay with us pleasant.

A few words about doctors. If you come to Minnesota to be doctored, you had better have remained at home; in other words, those who are daily requiring

the aid of a physician are too sick to come. We invite you to try our climate, and not our *medicine*. But yet it is well and oftentimes necessary to employ a physician, but it is never well to employ *eight or ten* at one time, nor is it well to make frequent changes. The advertising *charlatan* chronicles his *marvelous cures*, and produces his certificates, and pays for his advertising, while his dupes recompense him. Now, far be it from us to advise a patient not to visit or employ these *traveling agents*. We frequently send them patients. We think that the only way to reach the seat of some persons' disease is through their *gullibility*, and our experience is that it saves much valuable time to recommend the charlatan rather than advise against him with such people. To the invalid we offer no advice or suggestions as to the physician to be employed; but we do advise that, unless a decided mistake has been made, it is better not to "doctor around." And another thing we would suggest, and that is, allow your physician to take charge of your case, and not try and do it yourself. We find from experience that, as a general rule, loss of confidence between physician and patient is mutual. When things "go awry" and the physician does not meet expectation, oftentimes the fault is the patient's. In a word, if your physician's advice is worth anything, obey it; if not, do not employ him. This is a simple proposition, but yet it implies much; it is the little circumstances and surroundings of the invalid that impede or hasten cure; therefore see that *little* directions are obeyed, *little* questions correctly answered,

little precautions taken. We say *trust* to your physician; we would not by any means be understood to advise you to hang like a *dead weight* on his hands. We have had patients who seemed to take pleasure in saying they were *no better*, apparently with the sole purpose of *annoying* their physician and taxing his resources to the uttermost. Such patients generally succeed admirably; they do annoy their physician, they discourage him. It seems strange when we say that a word of encouragement to the physician by the patient oftentimes will have twofold the effect upon the patient that words of encouragement first spoken by the physician.* In our little professional conferences we often hear a brother physician say, "I could not stand it any longer; I had to throw the case up, it was so discouraging. The patient kept insisting day after day that he was worse, until I became discouraged." Now, physicians should not become discouraged, but they do. Again, to the patients we say tell the truth to your physician, but try *and tell it as pleasantly as possible* and it will repay you tenfold.

A few words as to the hygiene of consumption. In this "we speak as a man" profoundly sensible of the fallibility of man's advice. In previous chapters we have spoken disapprovingly of modern *hygienics*. The great trouble with these systems is this. No difference is recognized in individuals. "What is good

* This proposition at first reading seems strange. To those invalids who do not understand it, we would suggest that the next time your physician calls, greet him with a smile, and tell him you *hope* you feel better.

for one is good for all." "Do not all men have eyes, and ears, and mouth, and teeth, and stomach, and arms, and legs?" We answer, certainly; but nature never intended them all to act alike or think alike. In fact we are all different—differently constituted. We think differently, we act differently, and we look at things from a different standpoint.

We do not believe in the theory that all men are to *be led* and not *driven*. Some "take well" to *driving*, but there are none who take well to being *always* driven the *wrong* way,—to have every comfort taken from them and being made everlastingly miserable. In order to enjoy perfect health, a man should be moderate in all things. He should eat, drink, work, sleep, exercise, and carry himself in moderation. But it is well known that now and then one "gets off the balance" and is sick. Sound sense would dictate that the chord which was out of tune should be tuned or replaced, but not that the whole human instrument should be made over on a different and better plan. When one arrives at man's estate, it is too late to be *made over*. It is not necessary to the cure of consumption that this be done, because the disease has too many complications.

Now, if dyspepsia be a complication, it may be necessary to confine our patient to a peculiar diet,—for instance, oatmeal. On the other hand, suppose that digestion be pretty good, and our patient has been a hearty eater, should we confine him to slops and gruel? Or, if our patient be a delicate female, shall we condemn her to a long walk every day? Or shall

we force a patient to do that which obviously disagrees with him because such a treatment is suggested in the books? Shall we harness a little girl to a *patent lift* because her athletic brother was helped thereby? Or shall we cause the invalid who gets no sleep till midnight to rise for a six-o'clock breakfast, because the father, who sleeps from nine o'clock, desires it at that hour and thinks it healthy? Shall we force the young man to take a cold bath every day because his crochety old uncle has lived through it for seventy years? Or shall we subscribe to any outlandish, unreasonable idea because we have "read it in books," or we have seen others improve under it? No; better use the good sense a kind Providence has endowed you with, and try and rid yourself of the idea that the body must be addressed in an "unknown tongue," while good "Anglo-Saxon" is used in your conference with the *business* of life. The body will respond to the dictates of good sense very readily.

In the way of food we should advise caution. Eat a sufficiency of *good, wholesome* food: by wholesome we do not mean plain boiled meats, bread and butter, and boiled potatoes. If you long for something a little out of the way, tell your physician of it, and if he be a man of good sense, perhaps he will let you have it in moderate quantities. Try and board where the food is served and cooked tastefully and neatly, without being too much in quantity or too rich in quality: and for this reason we advise against hotels. Do without stimulants if possible (not tea and coffee, unless they disagree with you). Always hold stimulants in *reserve*

against a time of need, but yet be governed by your physician.

Sleep as much as you require, if it be *fourteen hours*. Sleep is intended for *rest*,—not for the purpose of demonstrating to the world whether you are a fool or a wise man by the number of hours you sleep. Sleep if possible in a well-ventilated room; this, understand, does not imply that the room must be in a freezing condition. Do not look upon a *stove*—a cast- or sheet-iron stove—as the great *enemy* of the human family, but look upon it as a fortuitous invention of man for the warming of a room.

Proper dress in Minnesota is of the utmost importance. Always dress warmly. The golden rule of the consumptive should be, *husband your animal heat* by dressing warmly, commencing with the feet. In fact the principal object of the invalid should be to keep up a *vigorous* circulation in all parts of the body; and a cold climate—a stimulating climate—is the climate of all others to promote a vigorous circulation. It induces quick movements and activity. Let the underclothing be of wool all the year round, and whenever a chilly day occurs in midsummer, put on thicker pants and an overcoat. Never suffer the stove to be taken from your room. In a word, never allow a contingency to arise whereby you may become chilled in the least degree. A few cold days now and then are decidedly advantageous if the necessary precautions are taken.

Avoid unnecessary exposure to the night air; it is damp and chilly. We would advise an invalid never

to *venture* out after tea—summer or winter. Avoid all the little *risks* that are possible to be avoided,—the excursion-parties, and fishing-parties, and picnics, under the auspices of *others*. If one plans them himself, he can avoid contingencies; if planned by others, you are the guest, and must abide their pleasure; and, with much certainty, you may rest assured something *will always happen* to delay the party till after nightfall.

We could fill several pages of deaths which were immediately traceable to untimely excursions. Many ladies run great risks in attending parties and evening entertainments, for fear of being called invalids. While we are delighted to hear that ladies are beginning to dislike being called “invalids” or “delicate,” yet we must protest against *risks*.

Now comes the most important of all questions to be answered,—How long to stay in Minnesota? In general terms we answer, until you get well or thoroughly recover. With some this will be a few months or a year, while others should remain permanently. The trouble with most persons is they do not stay long enough. We think there is such a thing as an artificial improvement; for instance, the pleasurable excitement of a few months in Minnesota. The change of air, of diet, and healthful surroundings occasions an appetite, with an increase of flesh, with every indication of permanent improvement. In fact it is a decided improvement; but the lungs have not yet had time to heal or cicatrize. The general health is improved, and the lungs are on the highway of improvement when the patient goes home. Then the same baneful

influences are again brought to bear. The cough recommences, the appetite fails, and discouragement ensues,—all hope is lost, and the patient sinks.

The consumptive, above all other invalids, should remember the maxim of minstrelsy, "When you have a good thing keep it." Remember that a climate which produces consumption once will reproduce it; and a climate which cures consumption and renews the health will in all likelihood be a safe country to reside in.

We admit that it is hard to break up old ties and form new ones; it is hard to recommence life in a new country; but it is harder to have the consumption and die with it.

Several days since, a few squares from our office a furious fire broke out in a stone building. In a short time all egress was cut off, and there were yet in the building two young men and a lady. The only alternative was to leap six stories to the ground, or burn. It was a terrible alternative, and but a moment given for the decision. The young men made the decision, leaped, and were saved; the lady wavered, and was lost.

We think it time that some of those little centers of consumption in the New England States were broken up. Many *old families* still live in the home of their forefathers, their sole end seeming to be to hand consumption down to posterity. While we hold that cold and moisture are the great excitors of consumption, yet for a moment we would not lose sight of the fact that those who are hereditarily predisposed to the

disease are the first to be attacked. Hence we must strenuously urge parties so predisposed to emigrate to a tonic climate, and see if perchance the family may not again, on new soil, take a new lease on life and health.

But you answer, "Why, then, not emigrate to the South? There is little consumption there." True; but it should be remembered that there are numerous other diseases there, and you are physically and hereditarily unsound; and if you are constitutionally predisposed to consumption, you are also predisposed to other diseases. Hence we advise those who are *weakly* to live in a tonic, bracing climate.

There is no disguising the fact that the South is the garden spot of the United States, so far as a mere residence is concerned. The soil yields bounteously with but little labor. The climate is delightful during certain seasons of the year. But, after all, a kind Providence has arranged climates equally—in habitable latitudes; and this fact is too often lost sight of. During the winter months we read of the South, and long for its mild, pleasant climate,—not but that we can make ourselves comfortable and happy in the North. Our health is good; our appetite never better. We sleep well, and we are happy: but it is simply cold out of doors. Our spring months may be cold and cheerless, but they pass rapidly. No one complains of the length of spring, for we have so many things to prepare for and think about. Then from May to November the climate of the North is unexceptionable, while in the South it is unbearable; and not as our

winters are unbearable, but sickness in a thousand forms stares you in the face.

A thought more, and we close. Traveling is a poor remedy for consumption. There are diseases which traveling benefits, but they are not the *consuming* diseases. Our advice is to find a place that seems to agree with you, and remain.

APPENDIX.

IN this place we present to our readers the meteorological reports of the Rev. A. B. Patterson, D.D., of St. Paul. They are for the most part,—in fact, we may say they are just as the doctor published them. We refrain from commenting on them at all; they show for themselves. They have not been selected, but they represent the twelve months previous to our book going to press.

It is but just, however, to ask the reader to look at them as a whole, that is, for the ten years they represent, and not for any fractional part of the time. For instance, this season has been a remarkably favorable season as regards frost. Spring commenced on April 1 and our first frost was on October 10. Our fall crops had been all harvested, including corn, a month before frost.

No one year in the climate peculiar to North America will suffice to judge of a climate. These reports are official; they were prepared for the Smithsonian Institute. It is but fair, when a comparison is made with other climates, that official data be required.

NOTES FOR OCTOBER, 1869.

We separate from the past month without regret. It has been uncomfortable, and to some extent disagreeable. It gave us a taste of winter altogether too decided for the second month of autumn, and its winds came with an unusual force and persistence. That Indian summer which the "old settlers" assured us would be on hand failed to put in an appearance. Perhaps the old settlers had best revise their experience, or else take in a supply of a commodity good for all conditions of men,—*reticence*.

Reference to records of nearly forty years shows that only one October in that term presents a lower mean temperature,—1863; and that then the cold was more equally distributed over the month, not presenting the continued extremes which were experienced in that which is past.

The rain-fall was very far below the average; in only four months in the past forty years has it been less. This was the only commendable feature of the month. The extended and continued cold has been very disastrous to the vegetable crop, especially potatoes. Thousands of bushels are frozen in the ground and must prove an entire loss. To some extent, and for the same cause, turnips and cabbages will be a short crop.

The fluctuations of the barometer were very remarkable, but were simply indicative of the many storms which prevailed in other and sometimes very distant sections of the country.

Thermometrical and other observations gave results as follows :

	Deg.
Maximum of the month (6th and 7th)	71
Minimum of the month (23d)	17
Highest daily mean (7th)	61½
Lowest daily mean (24th)	23
Greatest daily range (5th)	25
Least daily range (14th)	3
Range of the month	54
Mean temperature of the month	39·61
Mean cloudiness	4·4
Mean force of the wind	2·8
	Inches
Maximum of the barometer (30th)	29·70
Minimum " " (13th)	28·80
Range " "	00·90

Rain fell on five days and snow on two,—the latter in quantities not appreciable; yielding eighty-eight-hundredths of an inch of water.

The fair days were fourteen.

The winds came principally from N.W.

COMPARISONS WITH FORMER YEARS.

	Deg.
Mean temperature of October, 1859	42·50
" " " 1860	47·53-
" " " 1861	46·45
" " " 1862	45·90
" " " 1863	39·18
" " " 1864	44·87
" " " 1865	47·00
" " " 1866	49·00
" " " 1867	47·34
" " " 1868	43·59
" " " 1869	39·61

						Inches.
Deposit of moisture in October, 1859	.	.	.	.	.	0.46
“ “ “ 1860	.	.	.	.	.	4.64
“ “ “ 1861	.	.	.	.	.	2.86
“ “ “ 1862	.	.	.	.	.	1.07
“ “ “ 1863	.	.	.	.	.	1.44
“ “ “ 1864	.	.	.	.	.	1.60
“ “ “ 1865	.	.	.	.	.	1.30
“ “ “ 1866	.	.	.	.	.	2.64
“ “ “ 1867	.	.	.	.	.	1.01
“ “ “ 1868	.	.	.	.	.	4.56
“ “ “ 1869	.	.	.	.	.	0.88
Total water for ten months, 1862	.	.	.	.	.	27.70
“ “ 1863	.	.	.	.	.	14.20
“ “ 1864	.	.	.	.	.	13.00
“ “ 1865	.	.	.	.	.	35.72
“ “ 1866	.	.	.	.	.	23.20
“ “ 1867	.	.	.	.	.	32.87
“ “ 1868	.	.	.	.	.	34.35
“ “ 1869	.	.	.	.	.	30.11

NOTES FOR NOVEMBER, 1869.

The general character of the fall has been one of coolness, more so than even that of 1868. Yet as the cold weather was more evenly diffused through the season, the mean temperature was more equally preserved; and, therefore, unusually cold as the month has appeared to be, there have been four Novembers in the past eleven years colder.

Notwithstanding the small amount of water deposited in this and the preceding month, the Mississippi has continued to be in a good navigable stage, and has

remained open at this point, and without any obstacle to the passage of boats to Red Wing.

Thermometrical and other observations yielded results as follows:

	Deg.
Maximum of the month (3d)	65
Minimum of the month (21st)	6
Highest daily mean (3d)	53½
Lowest daily mean (30th)	14
Greatest daily range (2d)	29
Least daily range (19th)	2
Range of the month	59
Mean cloudiness	7·9
Mean force of the wind	2·4
	Inches.
Maximum of the barometer (7th and 24th)	29·50
Minimum “ “ (29th)	28·80
Range “ “	00·70

Rain fell on three days, and snow on ten,—the latter to the amount of five inches,—yielding in all seventy-five-hundredths of an inch of water.

The prevailing winds came from northwest and southeast. The fair days were equal to seven.

COMPARISONS WITH FORMER YEARS.

	Deg.
Mean temperature of November, 1859	33·43
“ “ “ 1860	29·23
“ “ “ 1861	30·03
“ “ “ 1862	28·36
“ “ “ 1863	30·05
“ “ “ 1864	30·28
“ “ “ 1865	37·04
“ “ “ 1866	32·62
“ “ “ 1867	34·06
“ “ “ 1868	31·13
“ “ “ 1869	30·10

				Inches.
Deposit of moisture in November, 1859	.	.	.	2·01
“ “ “ 1860	.	.	.	0·52
“ “ “ 1861	.	.	.	2·54
“ “ “ 1862	.	.	.	0·59
“ “ “ 1863	.	.	.	0·59
“ “ “ 1864	.	.	.	1·09
“ “ “ 1865	.	.	.	0·23
“ “ “ 1866	.	.	.	3·19
“ “ “ 1867	.	.	.	0·58
“ “ “ 1868	.	.	.	3·69
“ “ “ 1869	.	.	.	0·75
Total water for eleven months, 1862	.	.	.	28·25
“ “ “ 1863	.	.	.	14·45
“ “ “ 1864	.	.	.	14·03
“ “ “ 1865	.	.	.	35·95
“ “ “ 1866	.	.	.	26·39
“ “ “ 1867	.	.	.	33·45
“ “ “ 1868	.	.	.	38·03
“ “ “ 1869	.	.	.	31·86

NOTES FOR DECEMBER, 1869.

It rarely happens that any month proves as dark as the one just closed. There was but one day of perfect cloudlessness,—the seven which are recorded being made up from fractions of days. And yet gray weather in winter is almost always moderate weather. And so one winter month has passed without reaching any very severe or continued degree of cold.

The Mississippi continued to be open at St. Paul on the 1st, and the annual steamboat excursion took place, making four years out of the first five in which it has occurred. The river finally closed on the 4th. There has been some sleighing, with a moderate amount of snow,—better in the country than in town.

The range of the barometer during the year, from observations taken at 7 A.M., has been from the highest on the 15th of March, 29·85 inches, to the lowest on the 29th of June, 28·50 inches. The mean of these two numbers will probably give the normal mean of the atmospheric pressure at this point.

It appears from the records of a large number of years that a small amount of moisture is deposited in December. For twenty-one years the average fall is about eighty-five-hundredths of an inch. It will be perceived that the fall of this month is slightly in excess of the average.

SUMMARY OF OBSERVATIONS FOR 1869.

The mean temperature, at this point, for forty-five years is 43°. The mean of the past year was 42·70°, a small decrease from the average.

The total amount of water, which was precipitated in the form of rain or melted snow, was thirty-two inches and eighty-two-hundredths of an inch. In twenty-nine years the average mean fall is a little more than twenty-five inches.

Thermometrical and other observations give results as follows :

	Deg.
Maximum of the month (10th)	41
Minimum of the month (23d)	—10*
Highest daily mean (9th)	39 $\frac{2}{3}$
Lowest daily mean (23d)	—4 $\frac{2}{3}$
Greatest daily range (24th)	26
Least daily range (9th)	2
Range of the month	51
Mean temperature of the month	20·78
Mean cloudiness	7·1
Mean force of the wind	2·0
	Inches.
Maximum of the barometer (12th)	29·80
Minimum “ “ (3d)	28·85
Range “ “	00·95

Rain fell on two days, and snow on seven, the latter to the amount of six inches, yielding in all ninety-six-hundredths of an inch of water. The clear days were equal to seven. The winds came principally from southeast and west.

COMPARISONS WITH FORMER YEARS.

Mean temperature of December, 1859	5·41
“ “ “ 1860	14·86
“ “ “ 1861	21·34
“ “ “ 1862	22·05
“ “ “ 1863	20·55
“ “ “ 1864	12·03
“ “ “ 1865	10·25
“ “ “ 1866	16·81
“ “ “ 1867	15·53
“ “ “ 1868	16·37
“ “ “ 1869	20·78

* A dash (—) before a figure denotes below zero.

					Inches.
Deposit of moisture in December,	1859	.	.	.	0.56
“ “ “	1860	.	.	.	0.41
“ “ “	1861	.	.	.	0.10
“ “ “	1862	.	.	.	1.37
“ “ “	1863	.	.	.	1.30
“ “ “	1864	.	.	.	0.71
“ “ “	1865	.	.	.	2.19
“ “ “	1866	.	.	.	0.50
“ “ “	1867	.	.	.	0.65
“ “ “	1868	.	.	.	0.58
“ “ “	1869	.	.	.	0.96

Of the amount of moisture deposited in 1869 about forty-three inches was in the form of snow or hail.

The maximum temperature of the year occurred on the 16th of July, when the thermometer marked 90° . The minimum was not reached until what is usually accounted a spring month, March 4th,— 18° . The range in temperature during the year was less than usual,— 108° , 28° less than its predecessor.

The days of clear weather were one hundred and fifty-eight. Rain fell on seventy-eight days, and snow on twenty-seven. There was an unusually large amount of cloudy days, especially in the months of December and November.

NOTES FOR JANUARY, 1870.

It is a subject of general congratulation that the winter is passing away without any severe or continued degree of cold. In the month just closed, both the maximum and minimum temperature fell below those of its immediate predecessor, and its mean tem-

perature was consequently considerably less. A very large amount of cloudy weather prevailed, and more than the usual quantity of high wind. And yet the month has been upon the whole a pleasant one, and leaves behind it an agreeable impression. The fluctuations, both of the barometer and thermometer, have been rapid and frequent, indicating atmospherical changes which have not been fully felt in our section. A new theory has been advanced with regard to the source from which we derive our humidity. It has been the accepted opinion for a long time that the Gulf of Mexico furnished the clouds from whence were discharged our storms. It is now claimed by some, who profess to have studied the subject, that the moisture deposited in our climate is evaporated from the Pacific Ocean, and passes to us over Mexico. If this theory prove to be true, it will furnish some new views in our meteorology, and account for changes which have hitherto been inexplicable.

Observations for the month gave the following results :

	Deg.
Maximum of the month (5th and 28th)	33
Minimum of the month (18th)	—20
Highest daily mean (3d)	25
Lowest daily mean (17th and 18th)	—8½
Greatest daily range (18th and 30th)	24
Least daily range (14th)	5
Range of the month	53
Mean temperature of the month	14.82
Mean cloudiness	5.3
Mean force of the wind	2.4

								Inches.
Maximum of the barometer (8th)	.	.	.	.	.	.	.	29.80
Minimum " " (16th)	.	.	.	.	.	.	.	28.40
Range " "	.	.	.	.	.	.	.	1.40

Snow fell on nine days to the amount of about sixteen and a half inches. The heavy fall of the 16th had to be estimated on account of drift. Reduced to water it gave one inch and thirty-four-hundredths of an inch.

The fair days were fourteen. The winds came principally from northwest and southeast.

COMPARISONS WITH FORMER YEARS.

								Deg.
Mean temperature of January, 1859	.	.	.	.	.	.	.	12.68
" " " 1860	.	.	.	.	.	.	.	14.15
" " " 1861	.	.	.	.	.	.	.	9.64
" " " 1862	.	.	.	.	.	.	.	6.10
" " " 1863	.	.	.	.	.	.	.	20.10
" " " 1864	.	.	.	.	.	.	.	11.26
" " " 1865	.	.	.	.	.	.	.	13.51
" " " 1866	.	.	.	.	.	.	.	10.43
" " " 1867	.	.	.	.	.	.	.	8.05
" " " 1868	.	.	.	.	.	.	.	4.52
" " " 1869	.	.	.	.	.	.	.	19.37
" " " 1870	.	.	.	.	.	.	.	14.82

								Inches.
Deposit of moisture in January, 1859	.	.	.	.	.	.	.	0.64
" " " 1860	.	.	.	.	.	.	.	0.10
" " " 1861	.	.	.	.	.	.	.	0.55
" " " 1862	.	.	.	.	.	.	.	1.31
" " " 1863	.	.	.	.	.	.	.	1.12
" " " 1864	.	.	.	.	.	.	.	0.38
" " " 1865	.	.	.	.	.	.	.	0.65
" " " 1866	.	.	.	.	.	.	.	2.00
" " " 1867	.	.	.	.	.	.	.	0.97
" " " 1868	.	.	.	.	.	.	.	1.71
" " " 1869	.	.	.	.	.	.	.	0.42
" " " 1870	.	.	.	.	.	.	.	1.34

NOTES FOR FEBRUARY, 1870.

Winter is generally supposed to take its departure with the close of February. This theory may be proper in order to bring the months as nearly as possible within the limits of the seasons. It, however, does not fit in with the facts of our climate. Though the winter is closed technically, and its mean temperature is appended, we may yet expect some turns of severe weather.

It will be seen by the tables that but three of its name, in the past eleven years, have exceeded in warmth the month just closed, and one by a very slight amount. The average temperature of some forty-five winters at this point is a little less than 16° .

The amount of moisture which reached the ground in the form of rain and melted snow was a trifle in excess of the average, which is slightly more than half an inch. The approach of the snow-storm of the 27th and 28th was very decidedly indicated by the continued depression of the barometrical column. For nearly forty-eight hours it remained steadily at forty-eight and a half inches, and began to rise as the snow began fairly to fall. On only nine mornings during the winter season has the thermometer fallen below zero.

Observations for the month gave the following results:

	Deg.
Maximum of the month (10th and 26th)	39
Minimum of the month (20th)	—23
Highest daily mean (26th)	$36\frac{2}{3}$
Lowest daily mean (20th)	—11
Greatest daily range (3d)	30

								Deg.
Least daily range (26th)	.	.	.	.	.	.	.	4
Range of the month	.	.	.	.	.	.	.	62
Mean temperature of the month	.	.	.	.	.	.	.	17.79
Mean cloudiness	.	.	.	.	.	.	.	5
Mean force of the wind	.	.	.	.	.	.	.	2.3
								Inches.
Maximum of the barometer (20th)	.	.	.	.	.	.	.	29.70
Minimum " " (26th and 27th)	.	.	.	.	.	.	.	28.50
Range " "	.	.	.	.	.	.	.	1.20

Rain fell on two days and snow on six, the latter amounting to five inches, yielding in all sixty-hundredths of an inch.

The days of fair weather were equal to thirteen.

The winds came chiefly from southeast and northwest.

COMPARISONS WITH FORMER YEARS.

								Deg.
Mean temperature of February, 1859	.	.	.	.	.	.	.	17.34
" " " 1860	.	.	.	.	.	.	.	17.89
" " " 1861	.	.	.	.	.	.	.	17.92
" " " 1862	.	.	.	.	.	.	.	4.13
" " " 1863	.	.	.	.	.	.	.	15.26
" " " 1864	.	.	.	.	.	.	.	21.61
" " " 1865	.	.	.	.	.	.	.	24.38
" " " 1866	.	.	.	.	.	.	.	8.63
" " " 1867	.	.	.	.	.	.	.	16.16
" " " 1868	.	.	.	.	.	.	.	12.80
" " " 1869	.	.	.	.	.	.	.	18.73
" " " 1870	.	.	.	.	.	.	.	17.79
								Inches.
Deposit of moisture in February, 1859	.	.	.	.	.	.	.	0.25
" " " 1860	.	.	.	.	.	.	.	1.10
" " " 1861	.	.	.	.	.	.	.	1.69
" " " 1862	.	.	.	.	.	.	.	0.59

					Inches.
Deposit of moisture in February,	1863	.	.	.	0.93
"	"	"	1864	.	0.00
"	"	"	1865	.	1.85
"	"	"	1866	.	0.80
"	"	"	1867	.	1.12
"	"	"	1868	.	1.51
"	"	"	1869	.	2.83
"	"	"	1870	.	0.00

Eleven winters compare as follows in the degree of cold:

					Deg.
Mean temperature of the winter of	1859-60	.	.	.	12.49
"	"	"	1860-61	.	13.82
"	"	"	1861-62	.	10.52
"	"	"	1862-63	.	19.14
"	"	"	1863-64	.	17.81
"	"	"	1864-65	.	16.71
"	"	"	1865-66	.	9.18
"	"	"	1866-67	.	13.67
"	"	"	1867-68	.	10.95
"	"	"	1868-69	.	18.57
"	"	"	1869-70	.	17.79

NOTES FOR MARCH, 1870.

No month of the year, perhaps, is more fickle in its character. The past one has been more steady in its temperature than many of its predecessors. But, comparing the records of eleven years, we find an average mean temperature reaching from $13^{\circ}23'$, in 1867, to $46^{\circ}24'$ in 1860. This is a very large variation, larger than is presented by any other month during the same number of years. The season is in advance of the same date last year, so far as temperature goes; but

the amount of snow on the ground will retard the work of spring to a period fully as late as last year. The river opened at this point in 1869 on the 7th of April, and the first boat arrived through Lake Pepin on the 19th. These events will probably occur some days earlier this year, though the general character of the season is much like that of 1869. The amount of snow which has fallen during the winter is about fifty-three inches. In some cases it had to be estimated, and therefore perfect accuracy was impossible. There were about one hundred days of sleighing.

Thermometrical and other observations gave results as follows:

	Deg.
Maximum of the month (28th and 31st)	46
Minimum of the month (8th)	—10
Highest daily mean (31st)	40 $\frac{3}{4}$
Lowest daily mean (10th)	—5 $\frac{3}{4}$
Greatest daily range (18th)	30
Least daily range (15th and 19th)	6
Range of the month	56
Mean temperature of the month	27.46
Mean cloudiness	6.5
Mean force of the wind	2.3
	Inches.
Maximum of the barometer (23d)	29.70
Minimum “ “ (15th)	28.60
Range “ “	1.10

Rain fell on five days and snow on eight, the latter amounting to twenty inches, yielding in all two inches and ten-hundredths of an inch of water.

The days of fair weather were equal to nine.

The winds came principally from northwest and northeast.

COMPARISONS WITH FORMER YEARS.

					Deg.
Mean temperature of March,	1859	.	.	.	31·83
"	"	"	1860	.	46·24
"	"	"	1861	.	25·62
"	"	"	1862	.	26·24
"	"	"	1863	.	26·97
"	"	"	1864	.	26·83
"	"	"	1865	.	24·93
"	"	"	1866	.	18·83
"	"	"	1867	.	13·23
"	"	"	1868	.	32·60
"	"	"	1869	.	21·28
"	"	"	1870	.	27·49

					Inches.
Deposit of moisture in March,	1859	.	.	.	3·33
"	"	"	1860	.	2·04
"	"	"	1861	.	0·15
"	"	"	1862	.	0·95
"	"	"	1863	.	1·97
"	"	"	1864	.	1·28
"	"	"	1865	.	2·10
"	"	"	1866	.	1·32
"	"	"	1867	.	1·00
"	"	"	1868	.	1·22
"	"	"	1869	.	0·96
"	"	"	1870	.	2·10

NOTES FOR APRIL.

April had more of the character of spring than many of its predecessors. It proved the warmest of its name for twenty-five years; and though a large amount of snow remained on the ground at the beginning of the month, it disappeared very rapidly, and the plowing, which was checked in the fall, went rap-

idly forward. Sowing followed quickly, and the young grain showed itself before the end of the month. Altogether it was all April,—very pleasant and very desirable to have repeated.

Various observations yielded the following results :

	Deg.
Maximum of the month (13th, 23d, 30th)	83
Minimum of the month (15th)	27
Highest daily mean (13th)	69½
Lowest daily mean (15th)	28½
Greatest daily range (5th and 30th)	33
Least daily range (15th)	4
Range of the month	56
Mean temperature of the month	51·24
Mean cloudiness of the month	3·4
Mean force of the wind	2·1
	Inches.
Maximum of the barometer (25th)	29·64
Minimum “ “ (14th)	28·73
Range “ “	0·91

Rain fell on five days, and snow on one, the latter to the amount of nearly one inch, yielding one inch and thirty-nine-hundredths of an inch of water.

The fair days were equal to eleven.

The prevailing winds were from southeast and northwest.

COMPARISONS WITH FORMER YEARS.

	Deg.
Mean temperature of April, 1859	37·30
“ “ “ 1860	44·59
“ “ “ 1861	45·84
“ “ “ 1862	40·18
“ “ “ 1863	48·48
“ “ “ 1864	43·49
“ “ “ 1865	44·17

						Deg.
Mean temperature of April, 1866	.	.	.	.	.	41·65
“ “ “ 1867	.	.	.	.	.	40·18
“ “ “ 1868	.	.	.	.	.	39·07
“ “ “ 1869	.	.	.	.	.	41·02
“ “ “ 1870	.	.	.	.	.	51·24

						Inches.
Deposit of moisture in April, 1859	.	.	.	.	.	1·70
“ “ “ 1860	.	.	.	.	.	2·92
“ “ “ 1861	.	.	.	.	.	2·50
“ “ “ 1862	.	.	.	.	.	2·57
“ “ “ 1863	.	.	.	.	.	0·80
“ “ “ 1864	.	.	.	.	.	0·56
“ “ “ 1865	.	.	.	.	.	4·29
“ “ “ 1866	.	.	.	.	.	2·26
“ “ “ 1867	.	.	.	.	.	2·93
“ “ “ 1868	.	.	.	.	.	1·75
“ “ “ 1869	.	.	.	.	.	0·56
“ “ “ 1870	.	.	.	.	.	1·39

Total deposit of moisture for four months of 1859	.	.	5·92
“ “ “ 1860	.	.	6·18
“ “ “ 1861	.	.	4·89
“ “ “ 1862	.	.	5·56
“ “ “ 1863	.	.	4·82
“ “ “ 1864	.	.	2·11
“ “ “ 1865	.	.	8·89
“ “ “ 1866	.	.	5·88
“ “ “ 1867	.	.	6·02
“ “ “ 1868	.	.	5·04
“ “ “ 1869	.	.	4·80
“ “ “ 1870	.	.	5·43

NOTES FOR MAY.

The month came in with an unusually high temperature, and May-day was as warm and pleasant as could have been desired for its celebration. The

changeable nature of the month was, however, well maintained; and while on many days the thermometer reached 80° , and above 80° , there were many mornings on which a fire was necessary. No frost occurred in the neighborhood of St. Paul, which is an exceptional *non-event*. Very frequent and copious rains accelerated the progress of vegetation, which at the end of the month was fully three weeks in advance of the average time, and now promises an early and luxuriant yield.

Thermometrical and other observations yielded the following results:

	Deg.
Maximum of the month (17th)	89
Minimum of the month (9th)	47
Highest daily mean (17th)	$79\frac{3}{4}$
Lowest daily mean (9th)	$50\frac{1}{2}$
Greatest daily range (1st and 3d)	25
Least daily range (21st)	1
Range of the month	42
Mean temperature of the month	62.02
Mean cloudiness of the month	4.1
Mean force of the wind	2.6
	Inches.
Maximum of the barometer (19th)	29.35
Minimum " " (6th)	28.60
Range " "	0.75

Rain fell on eight days, and hail on one. Total amount of water deposited, five inches and twenty-four-hundredths of an inch.

There were seventeen days of clear weather.

The winds came principally from the southeast.

COMPARISONS WITH FORMER YEARS.

						Deg.
Mean temperature of May, 1859	.	.	.	.	.	58·84
“ “ “ 1860	.	.	.	.	.	60·64
“ “ “ 1861	.	.	.	.	.	52·35
“ “ “ 1862	.	.	.	.	.	59·17
“ “ “ 1863	.	.	.	.	.	59·92
“ “ “ 1864	.	.	.	.	.	59·00
“ “ “ 1865	.	.	.	.	.	58·94
“ “ “ 1866	.	.	.	.	.	54·80
“ “ “ 1867	.	.	.	.	.	49·65
“ “ “ 1868	.	.	.	.	.	60·43
“ “ “ 1869	.	.	.	.	.	57·65
“ “ “ 1870	.	.	.	.	.	62·02
						Inches.
Deposit of moisture in May, 1859	.	.	.	.	.	4·90
“ “ “ 1860	.	.	.	.	.	6·85
“ “ “ 1861	.	.	.	.	.	6·36
“ “ “ 1862	.	.	.	.	.	1·35
“ “ “ 1863	.	.	.	.	.	2·87
“ “ “ 1864	.	.	.	.	.	0·47
“ “ “ 1865	.	.	.	.	.	4·30
“ “ “ 1866	.	.	.	.	.	0·39
“ “ “ 1867	.	.	.	.	.	4·45
“ “ “ 1868	.	.	.	.	.	3·96
“ “ “ 1869	.	.	.	.	.	2·34
“ “ “ 1870	.	.	.	.	.	5·24
Total deposit of water for five months of 1859	.	.	.	.	.	6·48
“ “ “ “ 1860	.	.	.	.	.	14·03
“ “ “ “ 1861	.	.	.	.	.	11·25
“ “ “ “ 1862	.	.	.	.	.	9·58
“ “ “ “ 1863	.	.	.	.	.	7·69
“ “ “ “ 1864	.	.	.	.	.	2·58
“ “ “ “ 1865	.	.	.	.	.	13·09
“ “ “ “ 1866	.	.	.	.	.	6·27
“ “ “ “ 1867	.	.	.	.	.	10·47
“ “ “ “ 1868	.	.	.	.	.	9·71
“ “ “ “ 1869	.	.	.	.	.	7·11
“ “ “ “ 1870	.	.	.	.	.	10·04

					Deg.
Mean temperature of spring of	1859	.	.	.	42.66
"	"	"	1860	.	50.38
"	"	"	1861	.	41.28
"	"	"	1862	.	41.86
"	"	"	1863	.	46.44
"	"	"	1864	.	43.13
"	"	"	1865	.	42.68
"	"	"	1866	.	38.49
"	"	"	1867	.	34.35
"	"	"	1868	.	44.03
"	"	"	1869	.	39.93
"	"	"	1870	.	46.92

NOTES FOR JUNE.

The past month has been marked by some features of an unusual character. Chief among these was the height of its mean temperature, nearly $75\frac{1}{2}^{\circ}$, exceeding any of the past twelve years. A term of great heat commenced on the 17th, and continued until the morning of the 30th very steadily. Some showers during this period failed to modify its intensity. The 29th was the hottest day in thirteen years, the mercury reaching at two P.M. 99° , and its mean temperature being $89\frac{2}{3}^{\circ}$.

A very small amount of water reached the earth, there being only one year in the twelve last past in which less fell.

A severe drouth prevailed from the 13th to the end of the month, which must produce injury to all garden and field crops, unless very soon relieved.

The observations of the month, present the following results :

	Deg.
Maximum of the month (29th)	99
Minimum of the month (9th)	49
Highest daily mean (29th)	89 $\frac{3}{4}$
Lowest daily mean (7th and 9th)	56
Greatest daily range (17th)	21
Least daily range (6th and 7th)	10
Range of the month	50
Mean temperature of the month	75.39
Mean cloudiness of the month	3.0
Mean force of the wind	2.1
	Inches.
Maximum of the barometer (17th)	29.40
Minimum " " (30th)	28.84
Range " "	60.56

Rain fell on ten days, yielding seventy-nine-hundredths of an inch of water. There were twenty-two clear days. The prevailing winds were from the north-east and southeast.

COMPARISONS WITH FORMER YEARS.

	Deg.
Mean temperature of June, 1859	61.84
" " " 1860	66.86
" " " 1861	68.91
" " " 1862	65.70
" " " 1863	65.55
" " " 1864	69.72
" " " 1865	67.10
" " " 1866	63.98
" " " 1867	68.08
" " " 1868	67.55
" " " 1869	64.41
" " " 1870	75.39

					Inches.
Deposit of moisture in June, 1859	.	.	.	.	5.49
" " " 1860	.	.	.	.	5.00
" " " 1861	.	.	.	.	4.96
" " " 1862	.	.	.	.	2.66
" " " 1863	.	.	.	.	0.02
" " " 1864	.	.	.	.	1.62
" " " 1865	.	.	.	.	6.75
" " " 1866	.	.	.	.	6.00
" " " 1867	.	.	.	.	9.55
" " " 1868	.	.	.	.	2.68
" " " 1869	.	.	.	.	2.22
" " " 1870	.	.	.	.	0.79
Total deposit of water for six months of 1859	.	.	.	.	11.38
" " " " 1860	.	.	.	.	20.88
" " " " 1861	.	.	.	.	16.24
" " " " 1862	.	.	.	.	12.74
" " " " 1863	.	.	.	.	7.69
" " " " 1864	.	.	.	.	4.20
" " " " 1865	.	.	.	.	18.84
" " " " 1866	.	.	.	.	12.07
" " " " 1867	.	.	.	.	20.00
" " " " 1868	.	.	.	.	12.29
" " " " 1869	.	.	.	.	9.33
" " " " 1870	.	.	.	.	7.90

NOTES FOR JULY.

Without reaching the extreme heat which prevailed in June, the month was yet one of unusual warmth. Only once in the past twelve years has its mean temperature been exceeded. It gave weather perfectly adapted to the ripening of the harvest, and rain in sufficient supply to repair in a great measure the injury resulting from the drouth of June. Indian corn,

which had been more widely sown than usual, came forward with astonishing rapidity, and by the end of the month was considered to be beyond danger of the earliest known frost.

The various observations furnished results as follows:

	Deg.
Maximum of the month (19th)	95
Minimum of the month (8th)	61
Highest daily mean (19th)	84
Lowest daily mean (29th)	64
Greatest daily range (2d and 3d)	20
Least daily range (28th)	8
Range of the month	34
Mean temperature of the month	73·67
Mean cloudiness of the month	5·2
Mean force of the wind	1·5
	Inches.
Maximum of the barometer (29th)	29·40
Minimum " " (23d)	28·96
Range " "	0·44

Rain fell on ten days, depositing three inches and thirteen-hundredths of water.

The fair days amounted to twenty-two.

The prevailing winds came from southeast and northwest.

COMPARISONS WITH FORMER YEARS.

	Deg.
Mean temperature of July, 1859	73·17
" " " 1860	67·76
" " " 1861	68·49
" " " 1862	70·43
" " " 1863	68·49
" " " 1864	73·29
" " " 1865	66·41

					Deg.
Mean temperature of July, 1866	.	.	.	.	74.34
" " " 1867	.	.	.	.	68.35
" " " 1868	.	.	.	.	78.35
" " " 1869	.	.	.	.	69.73
" " " 1870	.	.	.	.	73.67
					Inches.
Deposit of moisture in July, 1859	.	.	.	.	2.95
" " " 1860	.	.	.	.	1.76
" " " 1861	.	.	.	.	2.69
" " " 1862	.	.	.	.	10.15
" " " 1863	.	.	.	.	0.63
" " " 1864	.	.	.	.	4.00
" " " 1865	.	.	.	.	2.55
" " " 1866	.	.	.	.	2.30
" " " 1867	.	.	.	.	2.84
" " " 1868	.	.	.	.	4.05
" " " 1869	.	.	.	.	1.67
" " " 1870	.	.	.	.	3.13
Total deposit of water for seven months of 1859	.	.	.	.	14.13
" " " " 1860	.	.	.	.	22.94
" " " " 1861	.	.	.	.	18.80
" " " " 1862	.	.	.	.	22.89
" " " " 1863	.	.	.	.	8.32
" " " " 1864	.	.	.	.	8.20
" " " " 1865	.	.	.	.	22.26
" " " " 1866	.	.	.	.	14.37
" " " " 1867	.	.	.	.	23.83
" " " " 1868	.	.	.	.	15.44
" " " " 1869	.	.	.	.	11.00
" " " " 1870	.	.	.	.	11.03

NOTES FOR AUGUST.

There are few months which present a more equable average temperature. Cool mornings, with a near approach to frost, find a compensation in the warmth

of mid-day. Hence, while the daily and monthly range in August is quite large, the mean temperature for a series of years has ranged between 62° and 69° . The large amount of rain which fell is a noticeable feature. This placed the Mississippi again in a good navigable condition. The temperature of the summer has been higher than that of any of the past twelve years.

From various observations the following results were obtained:

	Deg.
Maximum of the month (1st)	90
Minimum of the month (19th)	50
Highest daily mean (1st)	78 $\frac{2}{3}$
Lowest daily mean (19th)	55 $\frac{2}{3}$
Greatest daily range (14th)	25
Least daily range (22d)	3
Range of the month	40
Mean temperature	66.08
Mean cloudiness	4
Mean force of the wind	1.9

Rain fell on ten days. The amount of water deposited was eight inches and fifty-six-hundredths of an inch.

The fair days were equal to eleven. The winds were very variable, chiefly from a southern direction.

COMPARISONS WITH FORMER YEARS.

	Deg.
Mean temperature of August, 1859	69.48
“ “ “ 1860	66.00
“ “ “ 1861	67.27
“ “ “ 1862	66.68
“ “ “ 1863	67.00
“ “ “ 1864	71.44
“ “ “ 1865	66.83
“ “ “ 1866	62.38
“ “ “ 1867	68.30

					Deg.
Mean temperature of August, 1868	.	.	.	.	67.05
“ “ “ 1869	.	.	.	.	68.38
“ “ “ 1870	.	.	.	.	66.08
Mean temperature of summer of 1859	.	.	.	.	66.18
“ “ “ 1860	.	.	.	.	67.54
“ “ “ 1861	.	.	.	.	68.18
“ “ “ 1862	.	.	.	.	67.60
“ “ “ 1863	.	.	.	.	67.00
“ “ “ 1864	.	.	.	.	71.44
“ “ “ 1865	.	.	.	.	66.83
“ “ “ 1866	.	.	.	.	66.90
“ “ “ 1867	.	.	.	.	68.24
“ “ “ 1868	.	.	.	.	70.78
“ “ “ 1869	.	.	.	.	67.50
“ “ “ 1870	.	.	.	.	71.71
					Inches.
Deposit of moisture in August, 1859	.	.	.	.	2.72
“ “ “ 1860	.	.	.	.	0.88
“ “ “ 1861	.	.	.	.	2.97
“ “ “ 1862	.	.	.	.	4.58
“ “ “ 1863	.	.	.	.	3.19
“ “ “ 1864	.	.	.	.	2.00
“ “ “ 1865	.	.	.	.	9.15
“ “ “ 1866	.	.	.	.	4.73
“ “ “ 1867	.	.	.	.	2.32
“ “ “ 1868	.	.	.	.	3.08
“ “ “ 1869	.	.	.	.	7.62
“ “ “ 1870	.	.	.	.	8.56
Total deposit of water for eight months of 1862	.	.	.	.	24.31
“ “ “ 1863	.	.	.	.	11.54
“ “ “ 1864	.	.	.	.	11.33
“ “ “ 1865	.	.	.	.	31.52
“ “ “ 1866	.	.	.	.	19.31
“ “ “ 1867	.	.	.	.	25.17
“ “ “ 1868	.	.	.	.	19.42
“ “ “ 1869	.	.	.	.	18.62
“ “ “ 1870	.	.	.	.	19.59

NOTES FOR SEPTEMBER, 1870.

Though furnishing a very limited number of fair days, the month was one of much pleasantness. In warmth it fell very little behind August, and passed away without a visit from the frost king, leaving the verdure unchanged, except from natural decay. Notwithstanding the large amount of cloudy weather, there were only four days on which rain fell. There has seldom been a season in which crops and produce of all kinds have reached a more universal and complete maturity, and been more bountifully supplied.

Thermometrical and other observations yielded results as follows:

	Deg.
Maximum of the month (21st)	81
Minimum of the month (6th)	53
Highest daily mean (21st)	72½
Lowest daily mean (25th)	58¾
Greatest daily range (30th)	24
Least daily range (22d)	5
Range of the month	28
Mean temperature of the month	64·83
Mean cloudiness	5·2
Mean force of the wind	1·5

Rain fell on four days, yielding three inches and twenty-eight-hundredths of an inch of water. There were ten days of fair weather. The prevailing winds were from northwest and southwest.

COMPARISONS WITH FORMER YEARS.

	Deg.
Mean temperature of September, 1859	57·40
“ “ “ 1860	54·70
“ “ “ 1861	58·10

				Deg.
Mean temperature of September, 1862	.	.	.	58.57
" " " 1863	.	.	.	58.54
" " " 1864	.	.	.	56.12
" " " 1865	.	.	.	67.82
" " " 1866	.	.	.	53.90
" " " 1867	.	.	.	56.16
" " " 1868	.	.	.	51.45
" " " 1869	.	.	.	61.31
" " " 1870	.	.	.	64.83

				Inches.
Deposit of moisture in September, 1859	.	.	.	2.95
" " " 1860	.	.	.	4.72
" " " 1861	.	.	.	2.67
" " " 1862	.	.	.	2.89
" " " 1863	.	.	.	1.23
" " " 1864	.	.	.	1.14
" " " 1865	.	.	.	1.90
" " " 1866	.	.	.	2.26
" " " 1867	.	.	.	5.71
" " " 1868	.	.	.	2.88
" " " 1869	.	.	.	10.61
" " " 1870	.	.	.	3.28

Total water for nine months, 1862	.	.	.	.	27.20
" " " 1863	12.76
" " " 1864	12.47
" " " 1865	33.42
" " " 1866	21.57
" " " 1867	31.67
" " " 1868	29.79
" " " 1869	29.23
" " " 1870	22.87

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